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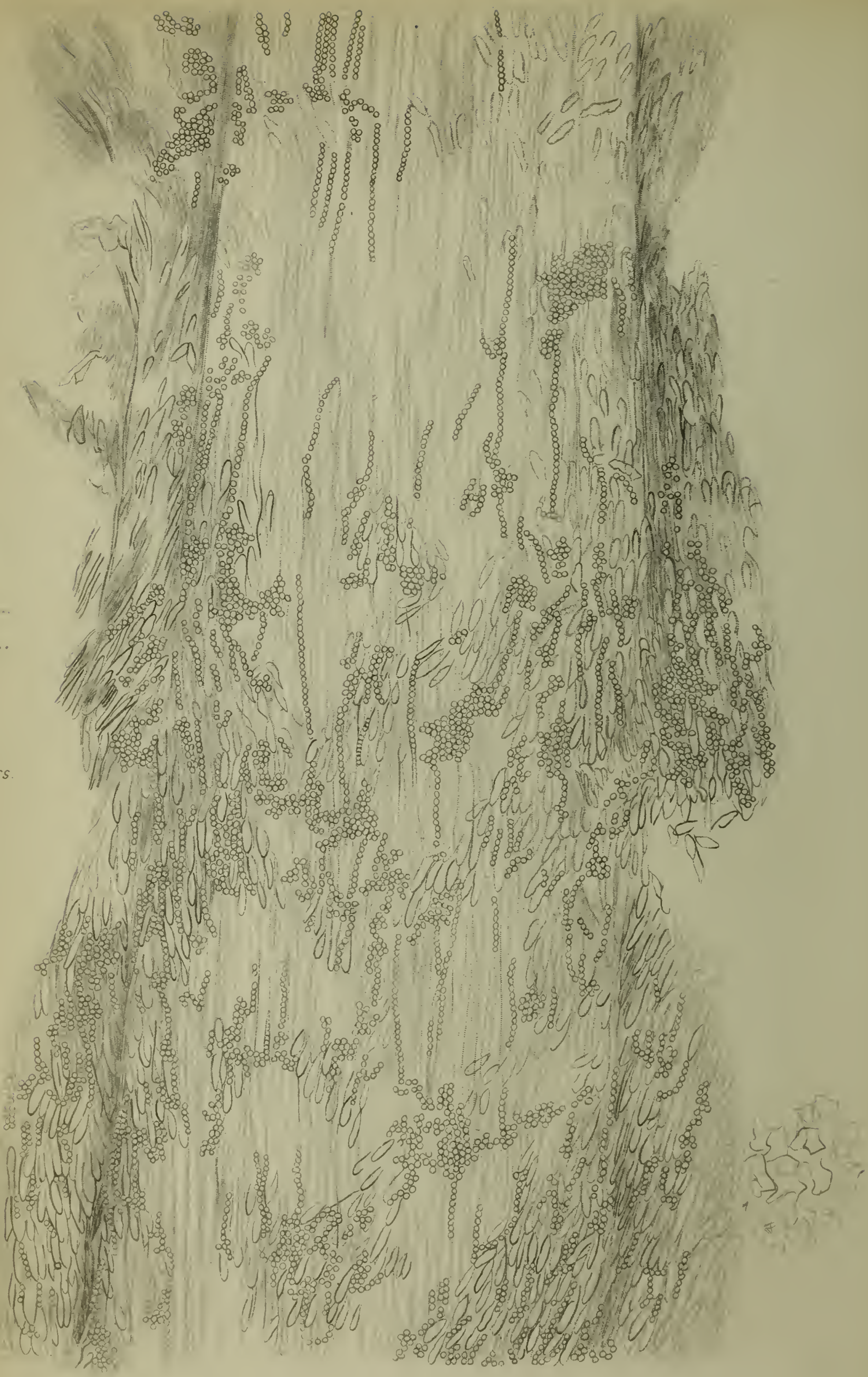

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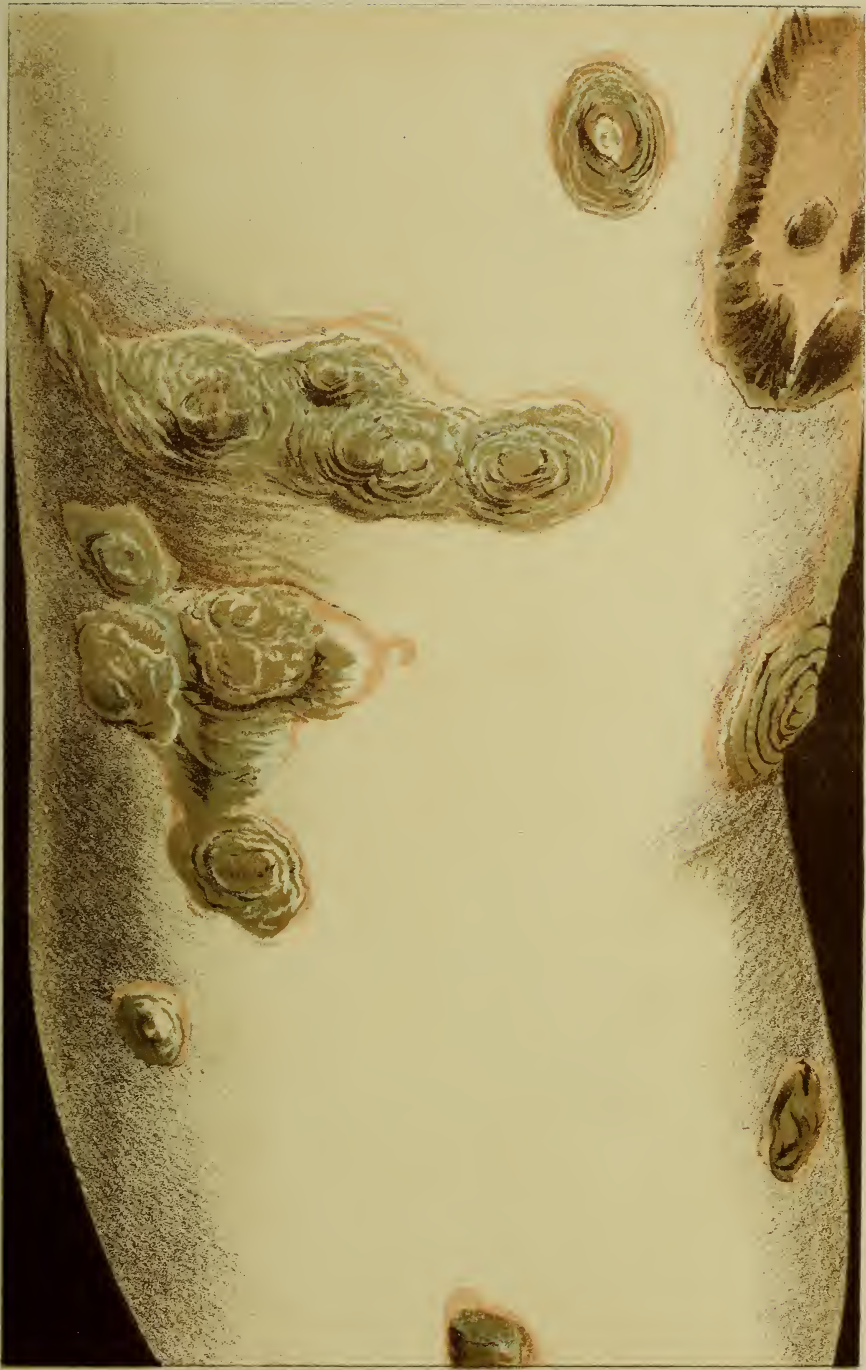

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PREFACE TO THE SECOND EDITION.

This volume is specially devoted to a consideration of the symptomatology, diagnosis, and treatment of diseases of the skin, and must be judged of from this point of view. No attempt has been made to deal with the anatomical lesions in an exhaustive manner, except in those cases in which results of real practical value have been arrived at.

The favourable reception accorded to the former edition (which was published both in this country and in America) has encouraged me to endeavour to make it still more worthy of the confidence of the student, and of the practitioner. The whole book has been thoroughly revised in the light of the more recent investigations, some of the chapters have been entirely re-written, and many new articles have been added.

I have to express my deep sense of obligation to numerous professional friends who have given me assistance of the utmost value, and whose contributions, I feel assured, will give to the book much of its value and importance. The names of these gentlemen and their contributions are given on the following page.

T. M'CALL ANDERSON, M.D.

2 Woodside Terrace,
Glasgow, *May*, 1894.

LIST OF CONTRIBUTORS, AND THEIR CONTRIBUTIONS.

H. C. CAMERON, M.D.—Most of the more purely Surgical sections, including Sebaceous Cyst, Anthrax, Pustula Maligna, Dermatitis Calorica, Nævus, and Epithelioma.

WILLIAM MACEWEN, M.D.—Most of the article on Ulcers.

GEORGE A. TURNER, M.D.—Elephantiasis, Lymph Scrotum, Frambœsia, and revisal of the articles by the late James Christie, A.M., M.D., on the other diseases of foreign climes—viz., Delhi Boil, Parangi, Donda Ndugu, Leprosy, Ainhum, Madura Foot, Pellagra, and Guinea-worm Disease.

P. G. UNNA, M.D.—Eczema Seborrhoicum, translated by C. Bernard Wolff, M.D.

THOS. D. SAVILL, M.D.—Dermatitis Exfoliativa Epidemica.

THOS. H. BRYCE, A.M., M.B.—Appendix, being abstract of cases reported in the *International Atlas of Rare Skin Diseases.*

JOHN BROWN, M.D.—Final revisal of the proofs, and preparation of the Index.

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DISEASES OF THE SKIN.

FORMS OF CUTANEOUS ERUPTION.

The forms of cutaneous eruption, or the lesions of the skin, as they are termed, constitute the basis of the classification of Willan, which for so long held sway in this country. As has been well remarked by Erasmus Wilson, they are the alphabet of dermatology—the letters, out of which are constructed the words signifying the various diseases of the skin. They are divided into two groups—

I. Primary lesions.
II. Secondary lesions.

The former are the first indications of disease at the point under observation, while the latter are secondary to, and succeed, some previous lesion.

I. PRIMARY LESIONS OF THE SKIN.

These are eight in number, viz.:—

1. Maculæ.
2. Papulæ.
3. Tubercula.
4. Phymata.
5. Pomphi.
6. Vesiculæ.
7. Bullæ.
8. Pustulæ.

1. **Maculæ.**—By this term is meant stains, discolorations, or alterations in colour of the skin, which are unaccompanied, as a rule, by elevation. They may be of any size from a mere point upwards, and they vary in shape, although more or less rounded as a rule. (*a.*) They may be *chemical*, of which we have familiar illustrations in the stains produced by iodine or nitrate of silver. (*b.*) They may be *pigmentary*, that is, due to the deposit of pigment in the mucous layer of the epidermis, as in lentigo (freckle); but, while pigmentary stains are often primary lesions of the skin, they are also very frequently secondary, as in the case of the coppery stains so frequently left after the disappearance of syphilitic eruptions. Or they may be

characterised by the absence of pigment, as in the white patches of leucoderma. (*c.*) Or they may be *congestive*, as in the case of the simplest of all inflammations of the skin—erythema. (*d.*) Or they may be *hæmorrhagic*, that is, due to an extravasation of blood into the substance of the skin, as in purpura. Hæmorrhagic are distinguished from inflammatory macules by the absence of heat, itching, or scaliness of the surface (desquamation); by there being no elevation above the level of the skin, as a rule; and above all, by the colour not temporarily disappearing on pressure. Hæmorrhagic stains are usually primary, but they may be secondary; thus, in erythema nodosum, rupture of the capillary blood-vessels may take place in the substance of the little tumours characteristic of that disease.

2. **Papulæ**, papules, or pimples, are little solid elevations which are usually round, and from the size of a pin-head to that of a small split-pea; they are generally *exudative or inflammatory*, the exudation having a special tendency to implicate the papillæ, while the epidermis, or at least its horny layer, is not implicated, but is stretched over the enlarged papillæ. The inflammation is very apt to select the rings of papillæ surrounding the orifices of hair follicles, in which case each papule may be perforated in the centre by a hair. At the commencement of the formation of the papule the affected parts are simply hyperæmic; this is followed by a serous exudation, and later on by a new formation of cells. In the early hyperæmic stage the redness of the papules is greater than in the later exudation one, for then the exudation compresses the capillary blood-vessels and displaces the blood. We have a good illustration of inflammatory papules in the disease formerly described under the name of lichen, but now usually recognised as a variety of eczema, and called eczema papulosum, or lichenoides.

But, while papules are usually, they are not necessarily inflammatory; they may be *glandular*, of which we have a familiar illustration in the affection termed milium, in which, owing to obstruction of the orifices of the sebaceous follicles, the sebaceous matter accumulates in the glands, and projects in the form of little pearly-looking nodules. Or they may be *epidermic*, as in the case of lichen pilaris, in which epithelial *débris* accumulates in the hair follicles, forming little elevations about the size of pin-heads, through the centre of some of which a fine hair may be seen to protrude. Papules may be isolated, in which case the eruption is said to be discrete; or they may run together, forming patches of varying shape and size (in which case it may be difficult to make out the nature of the elementary lesion, except perhaps at the edges), and then the eruption is said to be confluent.

3. **Tubercula**, or tubercles, are simply giant papules, varying in size from that of a pea to a marble. They vary, too, very much in structure. Thus, in fibroma molluscum there is a circumscribed hypertrophy of the corium—especially of that part which forms the sac of the hair—which pushes the more superficial parts before it; in syphilis and leprosy, on the other hand, there is a copious development of cells in the corium, which, according to Virchow, are connective-tissue corpuscles arrested in their growth, and which do not undergo further development, but are apt to degenerate and lead to ulceration or atrophy. In epithelioma, on the other hand, it is the epidermis, and not the corium, which is specially involved.

4. **Phymata**, or tumours, are larger than tubercles, being at least the size of walnuts, and are exceedingly varied in structure; sometimes they are sessile, occasionally they are pedunculated; sometimes they are very prominent, sometimes deeply set in the substance of the skin, as in the case of the little tumours of erythema nodosum.

5. **Pomphi**, or wheals.—These are circumscribed elevations, most frequently oval or rounded in form, or assuming the shape of segments of circles (hence the name), and very evanescent, appearing and disappearing with remarkable rapidity: they are the result of an acute inflammatory œdema having its seat in the papillary layer of the corium. The exudation is thinner and more serous than in the case of most inflammatory lesions; hence the rash is very fleeting, the vessels recovering their tonicity and the exudation being absorbed. In children the inflammation is often less fleeting, the exudation being accompanied by the deposit of lymph, and the eruption being more or less papular (lichen urticatus). When the wheal is typical, the circumference is red and the centre pale, because the exudation in the central part compresses the blood-vessels, and drives the blood to the periphery. There are some who hold that spasm of the muscular fibres of the skin has a good deal to do with the appearance of pomphi; while Liveing seems to be of opinion that the condition is the result of a spasmodic contraction of the muscular coat of the vessels.

We have familiar illustrations of pomphi in the result of the sting of the common nettle, and in the disease which takes its name from it—viz., urticaria, or nettle-rash.

6. **Vesiculæ**, or vesicles.—These are little elevations above the level of the skin, about the size of papules, but not solid like them, being due to the accumulation of clear or turbid serous fluid on the surface of the corium, or between the horny and mucous layers of the epidermis, or, more rarely, in the lymphatics of the corium (lymph-

angiectodes). They have a great tendency to appear at the orifices of the follicles, with the central portions of which they may be connected, and thus they are not unfrequently depressed in their centres—in small-pox, for example—in which case they are said to be umbilicated. Vesicles vary a good deal in size: when they are about the size of millet-seeds they are said to be miliary, of which we have illustrations in the vesicular form of eczema and in sudamina; when they are of larger size, they are said to be phlyctenular, as in shingles (zona, herpes zoster). Vesicles, like papules, may be discrete or confluent.

7. **Bullæ**, or blebs, are merely monster vesicles, varying in size from that of a split-pea to a small orange; but often, in an eruption which is quite appropriately called a bullous one, many of the bullæ may be so small that, were it not for the larger blebs associated with them, we should be justified in calling them vesicles. They may be tense or flaccid, and, like most vesicles, they contain serum, which, at first clear, may subsequently become opaque from admixture with epithelial cells, or the serum may be replaced by pus: in some cases, especially in bad constitutions, the contents may be sanious (bloody). The best illustration of a bullous disease is pemphigus, but it is not true, as some seem to suppose, that every bullous disease is pemphigus. Thus syphilis and dermatitis herpetiformis sometimes manifest themselves in the shape of a bullous eruption, and bullæ may occur, not as a primary but as a secondary lesion, as in typical cases of erysipelas: in eczema, too, when vesicles make their appearance where the skin is thick, as on the hands and feet, owing to the impediment to their rupture, they are apt to undermine the skin, run together, and form stray bullæ.

The appearances observed in the formation of a blister illustrate the changes resulting in the formation of vesicles and bullæ. In the first place, the vessels of the papillæ of the skin dilate; this is followed by a serous exudation, which passes up through the rete mucosum, and is arrested by the horny layer of the epidermis which forms the roof of the blister. In passing through the rete mucosum it pushes many of the cells before it; and these, adhering below to the papillary layer, especially between the papillæ, are drawn out into slender threads, which divide the blister into compartments. If the exudation is very copious, some of these trabeculæ may be torn across, and hang free, stalactiform, from its roof (Biesiadecki). The red areola, seen round most vesicles and bullæ, is due to the pressure of the fluid which they contain upon the vessels driving the blood to their periphery.

Sudamina, mentioned under the head of vesicles, on the other hand, are filled with sweat, and are due to swelling of the epithelium near the orifices of the sweat-ducts, thus preventing its escape: they are situated between the horny layers of the epidermis.

8. **Pustulæ**, or pustules, the result of a higher grade of inflammatory action than vesicles, contain pus, and are yellow and opaque. In the early stages the same changes are observed as in the case of vesicles. But the papillæ are studded with numbers of young cells, which extend to the deepest part of the mucous layer, so that, at the apices of the papillæ, no line of demarcation is to be seen between the true skin and the epidermis. These young cells approach the surface, and are set free as embryonic cells and pus-corpuscles, before there is time for their development into epithelial cells (Rindfleisch).

Pustules may be seated on the surface of the corium, or between the mucous and horny layers of the epidermis, as in cases of pustular eczema; or the pus may be more deeply seated, and injure the corium, in which case scars are left behind; or they may occur around, and in connection with obstruction of the sebaceous follicles, as in cases of acne.

Pustules vary in size like vesicles. The smallest, which are but slightly elevated, and generally perforated by hairs, are sometimes termed *achores:* when they are larger they are rather more deeply seated, surrounded by a red areola, often confluent as in pustular eczema, and are sometimes termed *psydracia:* when they are as large as split-peas they are usually isolated, and are termed *phlyzacia.* We have an illustration of them in the disease called ecthyma.

II. SECONDARY LESIONS OF THE SKIN.

As already observed, these are secondary to, and follow upon, one of the primary lesions. They are six in number, viz. :—

1. Excoriationes.
2. Ulcera.
3. Rimæ.
4. Squamæ.
5. Crustæ.
6. Cicatrices.

1. **Excoriationes**, or abrasions.—These are the result of the removal of the horny, and exposure of the mucous layer of the epidermis, or removal of both and exposure of the corium; and the abraded surface at first secretes a serous fluid, which dries into brownish crusts. Although some discoloration of the skin may remain for a time after the healing of excoriations, they leave no permanent mark, because the corium is not injured.

We have very good illustrations of this lesion in the raw surface which is left after the rupture of a bulla, or after the vesication of cantharides. The existence, seat, extent, and shape of excoriations are sometimes valuable aids to us in the diagnosis of itchy eruptions (as in the case of scabies and phtheiriasis corporis).

2. **Ulcera**, or ulcers.—This lesion differs from the last in that the corium, and often the subcutaneous cellular tissue too, is destroyed as well as the epidermis, in consequence of which a permanent cicatrix is left. It results usually from suppurative inflammation, sometimes from decay of the tissues the result of defective nutrition, and sometimes from infiltration of the true skin with new material, which replaces the normal tissues, and which subsequently degenerates. The seat, size, and shape of ulcers, as well as the characters of their edges and base, sometimes help us in diagnosis. Thus a syphilitic ulcer is apt to be rounded, with perpendicular edges as if cut out with a punch, and to have an ash-grey base, while the surrounding skin has often a coppery tint.

3. **Rimæ**—rhagades, or fissures—are linear fissures resulting from loss of the normal elasticity of the skin, especially at parts which are the seat of imflammation, and which are in constant motion, as around joints. The most familiar illustration of them is to be met with in that condition with which most of us are too well acquainted—viz., chapped hands: they are also frequently met with in cases of eczema of the palms; and occasionally, in strumous subjects, double fissure of the upper lip is observed.

4. **Squamæ**, or scales.—These are sometimes composed of laminæ of sebaceous matter mingled with epithelial cells (of which we have an example in the disease afterwards to be described under the name of seborrhœa sicca), but generally of epithelial cells thrown off as the result of inflammation, the process being termed desquamation. Eczema, though commonly a moist, is sometimes a dry affection (E. siccum), and then the surface is frequently covered with scales (E. squamosum), which affords a good illustration of the latter variety of squamæ. Every hyperæmia of the papillary layer of the skin interferes with, and interrupts the nutrition of the epidermis; and, as a consequence, the epithelial cells are imperfectly formed and in excessive quantity, hence the desquamation; and this is the reason why, in diseases such as psoriasis, the epithelial cells accumulate in thick scales instead of being cast off: the more exuberant the production of cells, the more imperfect is their development: they constitute intermediate cells between the cylindrical elements of the mucous layer and the deeper cells of the horny layer. The normal hardening, "cornification," of the cells is replaced by simple desiccation of the soft protoplasm.

The cells therefore adhere together, and thus retain their connection with the surface for an indefinite time (Rindfleisch). The silvery appearance of the scales so commonly seen in cases of psoriasis is said to be due to their containing air.

When the scales are very fine and mealy they are said to be *farinaceous*, as in tinea versicolor; when they are larger and bran-like, *furfuraceous*, as in chronic erythema (pityriasis); when they are very large, they are said to be *membranaceous*, as in dermatitis exfoliativa.

5. **Crustæ**—crusts or scabs—are due to the desiccation of secretions of various kinds, mixed usually with epithelial cells and particles of dirt. When the secretion from which they result is serous, the crusts are greyish or brownish in colour; when purulent, yellow or greenish (particularly in syphilitic cases); when bloody, black. But crusts are not necessarily the result of a morbid secretion; they may be due to fungus matter, of which we have a good illustration in the sulphur-yellow crusts of tinea favosa. The thickness of the crust depends on the consistence and rapidity of the secretion, and upon the degree of their adherence (they are most adherent, as a rule, on hairy parts, as they become entangled in the hair). If the secretion takes place very rapidly and is thin, there may be no crusts at all, as it is apt to flow off the surface before there is time for its desiccation.

6. **Cicatrices**, or scars.—In these there is a total absence of true skin, hair follicles, and glands, which are replaced by a new formation of connective tissue, covered with a layer of epithelium. They are always the result of destruction of the corium, and are usually preceded by ulceration, but they may occur without previous ulceration. Thus, we find them on the abdomen and breasts of women after pregnancy and lactation, *lineœ albicantes*, as the result of the previous stretching of the skin; or in consequence of the absorption of a new formation in the substance of the skin, which has compressed and destroyed it, as in the non-ulcerating form of lupus (lupus non-exedens) and in morphœa.

Cicatrices, when newly formed, are often red, but they usually soon become white, because they are sparingly supplied with blood-vessels, and because the mucous layer of the epidermis, which is the seat of the colouring matter of the skin, is destroyed. Hence, in Addison's disease, while the characteristic discoloration of the skin is rendered more intense by an abrasion, such as results from a fly-blister, ulceration is followed by a cicatrix, which is quite white. Cicatrices are generally smooth and shining in appearance, but often their surface is very irregular, and is marked by ridges or bands owing to the irregular formation of new tissue. They are often depressed, but, when the connective tissue is developed in excessive quantity, they may be much elevated, as in spurious keloid. Owing to the contraction of the new tissue, which is bound down to the parts beneath, puckering of the skin in the vicinity is very apt to take place, and the deformity thus resulting may be even so great as to require an operation for its removal. Although Hebra at one time wrote a paper on the non-existence of characteristic cicatrices, I think it must be admitted that their situation, size, shape, and appearance may often help us to a diagnosis. Thus, when we find numerous little depressed cicatrices which are limited to the face and shoulders, we may be pretty sure that they are due to a bygone attack of acne; and if we observe round white cicatrices with sharply-cut edges and coppery areolæ, we may be tolerably certain that they result from syphilitic ulceration.

THE CLASSIFICATION OF DISEASES OF THE SKIN.

It is not my intention to dwell at any length upon the classification which I have adopted, and which is but a modification of that followed for many years at the Glasgow Hospital for Skin Diseases, as explained by my colleague, the late Dr. A. B. Buchanan, in a very able article which he communicated to the *Edinburgh Medical Journal*, January, 1863. The object aimed at in this classification was to render it as useful as possible from a clinical point of view, and hence the most important point was to arrange the various diseases, *as far as practicable*, in accordance with their nature and cause. It is most desirable, no doubt, to have a classification in accordance with one principle; but in the present state of our knowledge it is impossible to fulfil the latter indication except at the expense of the former; and accordingly, two principles are involved in this clinical classification—namely, the pathological and the etiological.

We divide skin diseases, then, into two great classes—namely, (*a*) Functional and (*b*) Organic.

The Functional we subdivide into—

I. Affections of the skin.
II. Affections of the hair.
III. Affections of the sebaceous glands.
IV. Affections of the sudoriparous glands.

The Organic we subdivide into—

I. Inflammations.
II. New formations and tumours.
III. Hæmorrhages.
IV. Diseases produced by uniform causes.
  A. Parasitic affections.
  B. Syphilitic affections.
  C. Strumous affections.
  D. Eruptive fevers.

Before entering upon the consideration of the individual diseases of the skin, one or two preliminary observations may be made. The first of these is that it is always desirable, when possible, to examine our patients by daylight, especially in cases of doubt or difficulty, for artificial light alters the colouring, and changes the appearances of many eruptions to an extent that could hardly be credited. Again, it is of importance to make a rule of examining the whole surface of the body, or as much of it as possible, so as to enable us to secure a good general picture of the disease, and this is all the more necessary, seeing that the patient has a tendency to exhibit the part most readily uncovered, or which he has least delicacy in exposing, or where the eruption appears to him to have assumed the most aggravated form. Now, it happens not unfrequently that such a part is least characteristic of the disease, of which we have frequently illustrations in cases of scabies. Here, for example, the patient may exhibit his leg, which, as the result of scratching, is the seat of an acute eczematous affection, and, if we were to limit our view in such a case to this part, we would be apt to commit the error of calling the disease eczema instead of scabies. Finally, we must not at once accept as correct the statement of the patient as to the limitation of the eruption to the part exposed. Many say so in order to save themselves trouble, or from a false feeling of delicacy, or because they are really ignorant, or forgetful, of the existence of any eruption elsewhere.

ANALYSIS OF 10,000 CONSECUTIVE CASES OF SKIN DISEASE MET WITH IN HOSPITAL PRACTICE.

A. FUNCTIONAL AFFECTIONS.

Pruritus,	39	Vitiligo,	4
Seborrhœa,	13	Atrophia cutis,	2
Comedones,	10	Alopecia,	56
Milium,	1	,, areata,	153
Hyperidrosis,	5	Hirsuties,	2
Ephelis,	3	Fragilitas crinium,	3
Melanopathia,	1		

B. ORGANIC AFFECTIONS.

I. INFLAMMATIONS.

Erythema,*	470	Erysipelas,	10
„ multiforme,	1	Acne vulgaris,	288
„ nodosum,	5	Rosacea,	37
„ pernio,	2	Psoriasis,§	725
Eczema,†	2,527	Pemphigus,	12
Impetigo contagiosa,	10	„ foliaceus,	1
Ecthyma,‡	97	Pityriasis rubra,	6
Prurigo,	1	Deep inflammations,	345
Urticaria,‖	147	Ulcers,¶	433
Zona,	32	Onychia,	10
Dermatitis,	27		

II. NEW FORMATIONS.

Varix (uncomplicated),	41	Elephantiasis Græcorum,	1
Nævus vascularis,	9	Molluscum contagiosum,	6
„ spilus,	2	Fibroma molluscum,	1
Verruca,	29	Cicatrix,	4
Callositas,	10	Keloid,	5
Clavus,	1	Cysts,	23
Cornu,	2	Scirrhus,	5
Ichthyosis,	31	Epithelioma,	38
Scleroderma,	1	Unclassified tumours,	2
Elephantiasis Arabum,	7		

III. HÆMORRHAGES.

Purpura simplex,	6
„ tuberculosa,	1
„ rheumatica,	1

* Including strophulus, pityriasis, and roseola.
† Including its lichenous and impetiginous forms.
‡ Including rupia non-syphilitica.
§ Including lepra.
‖ Including lichen urticatus.
¶ Independent of struma and syphilis.

IV. DISEASES PRODUCED BY UNIFORM CAUSES.

A. PARASITIC AFFECTIONS.

Vegetable	Tinea favosa,		156
	Tinea tricophytina	circinata,	54
		tonsurans,	67
		circinata et tonsurans,	3
		sycosis,	18
	Tinea versicolor,		106
Animal	Scabies,		2,527
	Phtheiriasis,		327

B. SYPHILITIC AFFECTIONS.

Primary accidents,	24
Secondary and tertiary accidents,	437
Hereditary syphilis (infantile),	55
„ „ (non-infantile),	1

C. STRUMOUS AFFECTIONS.

Lupus,	198	Strumous glands,	191
Scrofuloderma,	27	„ ulcers,	85
Lichen scrofulosorum,	3	„ abscesses,	8

D. ERUPTIVE FEVERS.

Morbilli,	1
Scarlatina,	2
Variola,	6

ANALYSIS OF 1,000 CONSECUTIVE CASES OF SKIN DISEASE MET WITH IN PRIVATE PRACTICE.

A. FUNCTIONAL AFFECTIONS.

Pruritus,	11	Alopecia,	18
Comedones,	7	„ areata,	44
Hyperidrosis,	1	Hirsuties,	5
Ephelis,	3	Fragilitas crinium,	2
Atrophia cutis,	1	Canities,	4

B. ORGANIC AFFECTIONS.

I. INFLAMMATIONS.

Erythema,[*]	99	Rosacea,	21
„ pernio,	2	Psoriasis,[‡]	106
Eczema,[†]	348	Pemphigus,	3
Impetigo contagiosa,	1	Pityriasis rubra,	1
Prurigo,	2	Lichen ruber,	1
Urticaria,	5	Furunculus,	10
Zona,	1	Ulcers,[‖]	7
Acne vulgaris,	54		

II. NEW FORMATIONS.

Varix (uncomplicated),	4	Elephantiasis Arabum,	1
Nævus vascularis,	2	„ Græcorum,	1
„ spilus,	1	Scirrhus,	2
Verruca,	4	Epithelioma,	9
Ichthyosis,	7	Multiple fatty tumours,	1
Scleroderma,	1		

III. HÆMORRHAGES.

Purpura rheumatica,	1
Hæmidrosis,	1

IV. DISEASES PRODUCED BY UNIFORM CAUSES.

A. PARASITIC AFFECTIONS.

Vegetable	Tinea favosa epidermis,			4
	Tinea tricophytina	circinata,[¶]	10	36
		tonsurans,	20	
		sycosis,	6	
	Tinea versicolor,			15
Animal	Scabies,			44
	Phtheiriasis,			7

B. SYPHILITIC AFFECTIONS.

Scondary and tertiary accidents,	51
Hereditary syphilis (infantile),	3
„ „ (non-infantile),	3

C. STRUMOUS AFFECTIONS.

Lupus	vulgaris,	22	25	Lichen scrofulosorum,	2
	erythematodes,	3		Strumous glands,	9
				„ ulcers,	2
Scrofuloderma,			6	„ abscesses,	1

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[*] Including strophulus, pityriasis, and roseola.

[†] Including its lichenous and impetiginous forms.

[‡] Including lepra.

[‖] Independent of struma and syphilis.

[¶] Including the so-called eczema marginatum.

ANALYSIS OF A THOUSAND CONSECUTIVE CASES OF SKIN DISEASE MET WITH IN PRIVATE PRACTICE, INCLUDING THE SEX AND AGE OF THE PATIENTS.

Extracted from Professor M'Call Anderson's Notebooks by Dr. Herman F. Lawrence, of Melbourne.

A. FUNCTIONAL AFFECTIONS.

	Sex.		Total.	Age.	
	M.	F.		Range.	Average.
Pruritus, ...	21	8	29	25-84	44
Seborrhœa, ...	8	3	11	3 M$^{\text{ths}}$-46	21
Comedones, ...	6	8	14	4-25	19
Dysidrosis, ...	2	1	3	25-47	38
Vitiligo, ...	2	1	3	19-49	30
Ephelis, ...	1	4	5	26-46	35
Alopecia, ...	10	5	15	8-70	29
,, areata, ...	28	21	49	3-48	23
Hirsuties, ...	...	8	8	25-45	31
Fragilitas crinium, ...	2	...	2	24-28	26
Trichorexis nodosa, ...	...	1	1	2	...

B. ORGANIC AFFECTIONS.

I. INFLAMMATIONS.

	Sex.		Total.	Age.	
	M.	F.		Range.	Average.
Erythema (including roseola and pityriasis),	30	33	63	2-70	31
,, multiforme, ...	1	...	1	26	...
,, nodosum, ...	...	1	1	22	...
,, pernio, ...	1	3	4	14-39	29
Pityriasis rubra, ...	...	1	1	60	...
Lichen planus, ...	4	1	5	30-70	47
Urticaria, ...	6	7	13	4-65	39
Zona, ...	5	...	5	25-84	55
Dermatitis herpetiformis, ...	2	3	5	6-68	20
,, medicamentosa (iodide rash), .	1	...	1	29	...
Erysipelas, ...	5	3	8	40-58	45
Eczema, ...	184	109	293	4 M$^{\text{ths}}$-93	33
Impetigo contagiosa, ...	1	...	1	39	...
Acne vulgaris, ...	22	46	68	4-50	23
Rosacea, ...	8	23	31	20-67	37
Ecthyma, ...	...	1	1	not given	...
Psoriasis, ...	64	54	118	2-70	31
Furunculus, ...	9	2	11	14-60	32
Anthrax (carbuncle), ...	5	...	5	40-70	53
Ulcers, ...	5	5	10	8-64	31

B. ORGANIC AFFECTIONS (*Continued*).

II. NEW FORMATIONS.

	Sex.		Total.	Age.	
	M.	F.		Range.	Average.
Ichthyosis (congenital),	...	1	1	33	...
Nævus spilus,	...	1	1	2	...
,, vascularis,	2	5	7	7-60	28
Verruca,	4	2	6	40-65	51
Molluscum fibrosum,	...	1	1	46	...
Elephantiasis Græcorum,	1	...	1	33	...
Tylosis linguæ,	3	...	3	30-53	44
Paget's disease of the nipple,	...	1	1	45	...
Epithelioma,	5	5	10	25-71	47
Varix (uncomplicated),	11	2	13	20-70	48

III. HÆMORRHAGES.

Purpura simplex,	...	2	2	21-44	32

IV. DISEASES PRODUCED BY UNIFORM CAUSES.

1. Parasitic Affections.

Vegetable,	Tinea favosa,		...	...	...	...	...
	Tinea tricophytina,	circinata,	...	3	3	6-17	12
		tonsurans,	20	13	33	2-57	9
		sycosis,	5	...	5	25-42	33
	Tinea versicolor,		3	1	4	20-28	25
Animal,	Scabies,		21	7	28	3-45	15
	Phtheiriasis,		1	1	2	9-33	21

2. Syphilitic Affections.

Secondary and tertiary accidents,	43	3	46	18-60	35

3. Strumous Affections.

Lupus,	vulgaris,	5	14	19	5-58	26
	erythematodes,	...	11	11	18-54	37
Scrofuloderma,		3	1	4	7-19	13
Strumous glands,		3	3	6	2-50	22
,, ulcers,		2	3	5	5-43	20
,, abscesses,		...	2	2	27-35	31

4. Eruptive Fevers.

Varicella,	1	...	1	4	...

A. FUNCTIONAL AFFECTIONS.

I. AFFECTIONS OF THE SKIN.

1. PRURITUS.

By this term is meant irritation, or itching unaccompanied by eruption, except what may be induced by scratching, of which we shall have more to say hereafter in discussing the diagnosis of animal parasitic affections. There can be little doubt that very frequently cases are erroneously classed under this head: thus the pruritus, on careful investigation, is often found to be dependent on the ravages of the itch insect or the louse, or upon recurrent outbreaks of nettle-rash, and should, therefore, be classed under the respective heads of scabies, phtheiriasis, or urticaria, and care must be taken to exclude these affections. But even with this qualification, pruritus is not an uncommon affection, for it occurred 39 times among the 10,000 public, and 40 times among the 2,000 private cases given above. This disagreeable sensation has been variously described, as tingling, creeping, crawling (formication), &c. It may be continuous or intermittent, and is almost always most complained of on undressing, after getting warm in bed, or when the attention is not otherwise occupied. It may even torment the sufferers during sleep. "It influences their dreams in the most varied and extraordinary shapes. Sometimes the poor fellow believes that he is stroking his favourite dog, and, as this pleases the dog, he goes on stroking, at first gently, and then by degrees with more and more energy, till he uses his nails freely. He gets quite out of breath with scratching, and cannot by any means abstain; then he wakes up suddenly and finds that his favourite hound was his own skin, and proof that he has really only been scratching this in his dream is afforded by the number of smarting and burning excoriations. Another time he dreams that he has to rub or polish the floor or to scrape the walls. The visions are always analogous and concern his own diseased skin."*

It may involve the whole body, as we often see in old people whose health is failing (pruritus senilis); but more frequently it is localised, and the parts most liable to be attacked are the anus (pruritus ani), the scrotum (pruritus scroti), and the labia (pruritus pudendi). The diagnosis of pruritus is easy—in fact, the patient furnishes us with it; but the diagnosis of the cause, which is much more important, is often obscure. In any case, it is the result of direct or of reflex irritation of the cutaneous nervous filaments, and we must endeavour to ascertain the source of this irritation, else we are little likely to benefit our patient. To aid in this investigation, a few of the more common causes may be mentioned. It frequently occurs in connection with derangement of the digestive organs and with constipation; diseases of other internal organs, too, such as the kidneys, uterus, or ovaries, though less frequently, may produce it; and it often results from impediment to the free return of venous blood from the part—*e.g.*, the pressure of abdominal tumours on the large veins in the pelvis in the case of pruritus vulvæ and pruritus ani. It is a well-known and frequent accompaniment of jaundice, and is then supposed to result from the poisonous action of the bile acids, circulating with the blood, upon the nerves of the skin; but it is not so well known that a frequent source of it is the presence of sugar in the urine, especially of that form which attacks the genital organs, and we can thoroughly endorse the following statement of Trousseau,* which applies to pruritus as well as eczema: "When you are consulted by women who are becoming elderly, for intense itching in and around the vulva—when, on examining the parts, you find that there is eczema, and learn that it has come on irrespective of the menstrual periods, or of any leucorrhœal discharge, and that the pain it occasions is so great as to prevent sleep—the probable existence of glucosuria will suggest itself." From all this it will be apparent that, if we are to avoid errors of diagnosis as to the cause of the pruritus, a careful examination of the various organs will have to be made. It is right, however, to mention that often no satisfactory explanation can be obtained, or the cause which produced it may have disappeared, while the itching continues, owing to the cutaneous nervous filaments having, so to speak, contracted a bad habit.

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* "On Diseases of the Skin, including the exanthemata," by F. Hebra, M.D., and M. Kaposi, M.D. *New Syd. Soc. translation*, vol. v., p. 98. London, 1880.

Occasionally the disease is mental rather than physical. A lady, about fifty years of age, consulted me some years ago on account of intolerable irritation of the skin, which deprived her in great measure of sleep, and made her life "a burden to her." The history which she gave of her case was, that nearly two years before I saw her, she went to visit a friend who was very deaf, and who used a speaking trumpet. She put her mouth close to the mouth-piece of the trumpet, and immediately experienced the irritation complained of, and from that moment it never left her. No trace of skin affection could be detected, and the pruritus could not have been very severe, as there were no marks of her nails to be seen. I never heard of her again, but it is not improbable that her case ended in insanity.

Finally, there is a variety of pruritus described by Dr. Duhring under the name of *pruritus hiemalis*.† This form occurs in cold climates during cold weather, and appears to result from the cold; hence it is present generally during the autumn, winter, and spring months, sometimes for the whole of that time, sometimes only for a few weeks. It may be an annual visitor. It is chiefly met with on the lower extremities, but is equally frequent in both sexes and amongst all classes of the community. It is a neurosis, and, according to Dïakonoff,* consists primarily in an abnormal irritation of the cutaneous sensory nerves, which, in a reflex way, through the sympathetic ganglia and vaso-motor nerves, brings about a localised paralytic dilatation of the cutaneous capillaries, with a subsequent disturbance in the nutrition of the sensory nerves.

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* "Lectures on Clinical Medicine," *New Sydenham Society's translation*, 1870, vol. iii., p. 503.

† *Philadelphia Medical Times*, January 10, 1874.

Treatment.—Our first duty is to endeavour to ascertain, and, if possible, to remove the cause of the pruritus: thus, if dependent on hæmorrhoids, jaundice, diabetes mellitus, digestive derangement, or constipation, the treatment resolves itself into that of the morbid state present, upon which it is unnecessary to dwell. But, if the presumed cause cannot be ascertained or removed, or if—as sometimes happens—it has been removed, and the irritation continues, purely empirical treatment must then be resorted to, and, in cases of this kind, it is desirable to have a good many strings to our bow, seeing that we have to deal with a most obstinate affection, and one which often taxes the patience of physician and patient alike. In such circumstances, carbolic acid † may be tried, or cod-liver oil, or nerve tonics, such as strychnia, phosphorus, and arsenic. Or instead of, or in combination with, one of these, sedatives to the nervous system may be given, in the first rank amongst which antipyrin (the initial dose being 15 grains) and the sulphate of atropia must be placed: the latter may be administered by the mouth, the initial dose for an adult being $\frac{1}{70}$th of a grain; or, better still, by subcutaneous injection—commencing with $\frac{1}{100}$th of a grain. But whichever drug is used the dose should be cautiously increased, either until its physiological effects are pronounced, when it would be unsafe to push it farther, or until the pruritus has been subdued. Valerian is highly prized by MM. Besnier and Doyon, and Dr. L. D. Bulkley, of New York, has a high opinion of the tincture of gelsemium in doses of 10 drops, to be repeated in the same, or in a larger, dose in half-an-hour, and so on till relief is obtained, or until a drachm is taken within a couple of hours. He has

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* *The London Medical Record*, June 15, 1886, p. 234.

† ℞	Acidi carbolici,	ʒij.
	Syrupi aurantii,	℥i.
	Aquæ,	℥v.
		—*Solve.*

Sig., A measured teaspoonful in a large glass of water three times a day on an empty stomach.

also a high opinion of tincture of cannabis indica in doses of 10 minims to commence with. If these remedies fail, the bromide of potassium, sodium, or ammonium, or a combination of them, may be tried.

Warm baths are often useful, especially those containing 4 ounces of sulphuret of potassium and a couple of handfuls of starch, and the surface may be cleansed with a superfatted soap, one containing menthol (Eichhoff's) being specially applicable. These baths should be taken at bed-time, and, in many cases, great benefit is derived from the use of hot drinks after getting into bed, and the subcutaneous injection of pilocarpine (gr. $\frac{1}{6}$ to gr. $\frac{1}{3}$) sufficient to produce free perspiration.

A great variety of external applications have been recommended, a testimony to the obstinacy of the affection, but it will be sufficient to give a few illustrations of the kind of remedies from which relief may be sought. The various preparations of sulphur, tar, and carbolic acid—mentioned under the treatment of eczema—have been freely employed, but without the same amount of success as in the case of that disease. Sometimes relief may be obtained from the use of an ointment containing chloral and camphor,[*] or a sulpho-alkaline ointment containing cyanide of potassium,[†] or one containing opium and creosote,[‡] or a mixture composed of belladonna, hyoscyamus, and acetic acid,[§] or a lotion of perchloride of mercury (gr. ij to the ounce).

[*] ℞ Chloralis hydratis.

Camphoræ, āā, ...	ʒss.
Misce intime et adde.	
Glycerini (Price), ...	ʒi.
Lanolini purissimi, ...	ʒvi. —*M.*

Sig., Apply night and morning, and when itching is complained of.

[†] ℞

Potassii cyanidi, ...	grs. v.
Sulphuris.	
Potassæ bicarbonatis, āā, . . .	ʒss.
Cocci cacti, ...	gr. i.
Ung. simplicis, ...	℥i. —*M.*

[‡] ℞

Opii, ...	grs. viij.
Creosoti, ...	♏x.
Ung. simplicis, ...	℥ij.

—*M.* (*Neligan*).

[§] ℞ Fol. belladonnæ.

Fol. hyoscyami, āā, ...	ʒij.
Fol. aconiti, ...	ʒss.
Acidi acetici, ...	℥i. —*M.*

A drachm of this is diluted with an ounce of water; or it may be mixed with an equal quantity of glycerine and painted on the parts; or it may be used as an ointment—a drachm or more to the ounce of simple ointment (Dr. R. W. Taylor, of New York).

Dr. Satterlee recommends the use of the fluid extract of conium, applied by means of a brush, and Dr. L. D. Bulkley a lotion containing bismuth and hydrocyanic acid.[*] Occasionally relief is obtained by sponging the surface with a warm decoction of poppy heads, or by the application of a weak, continuous current of electricity—*e.g.*, ten cells of a Leclanché battery for ten minutes night and morning, and when itching is complained of. The sponges may be applied to the top and bottom of the spine, or, in cases of local pruritus, one of them may be placed upon the part. In obstinate cases, and when the pruritus is localised, the surface may be painted with blistering fluid. In pruritus ani suppositories of cacao butter, containing half a grain of cocaine, are specially to be recommended.

In pruritus hiemalis, Dr. Duhring expresses a perference for glycerine in the form of lotion or ointment, or for alkaline baths (from two to six ounces of carbonate of soda being dissolved in each bath), the underclothing being warm, soft, and unirritating. For this affection he has little faith in internal remedies, except when functional derangement of internal organs coexists.

2. ATROPHIA CUTIS (*Atrophoderma*).

Atrophy of the skin may be either a primary or a secondary affection; but with the latter, which occurs in connection with and in consequence of other diseases, such as lupus, tinea favosa, &c., we have at present nothing to do. Primary atrophy of the skin may be either general or partial. Of the former we have an illustration in the atrophy which occurs in common with that of the other structures of the body in old people (senile atrophy), but it occasionally occurs in earlier life and in an aggravated form. The skin is thin and stretched as if it was too small for the body; the ears are curled up; the eyes and teeth are partially exposed, and the nose and cheeks are pinched. The fingers and toes are shrunken, white, and bent, and ulceration may attack them. The surface is cold and often numb. Cases of this rare form of atrophy have been recorded by Wilson.[†]

The latter is much more frequently met with, and arises in various ways. We often meet with it as the result of undue stretching of the skin, causing it to give way in streaks or lines, as on the breasts and abdomen of women who have been pregnant (lineæ albicantes). It occasionally occurs too in wavy lines following the course of certain

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[*] ℞

Bismuthi subnitratis, ...	ʒij.
Acidi hydrocyanici diluti, . . .	ʒij.
Mist. amygdalæ, ...	℥iv.

—*Misce.*

[†] *On Diseases of the Skin.* Ed. vi., pp. 393-4.

nerves (atrophia cutis linearis). These vary from one to several inches in length, and from two to three lines or more in breadth, and are whitish, depressed, and void of sensation. At first a faint white line, with slight redness at the edges, is observed. This gradually becomes broader and deeper: the skin is withered and its sensibility is lost, and ultimately the adjoining parts of the healthy skin are drawn together, nothing remaining but a deep linear groove resembling the scar of a sabre-cut (Wilson). In two cases which I had met with in recent years, the atrophy consisted of a narrow, white, depressed line, extending from the supraorbital notch, nearly perpendicularly over the brow along the track of one of the branches of the supraorbital nerve. In another case, the atrophy implicated small irregular patches of skin upon the leg, brow, upper lip, and neck below the right ear. (See also article on morphœa.) The nature and cause of these nerve-lesions is obscure, and it is useless to speculate upon them, but they seem to be dependent, in many cases at least, upon local conditions, seeing that they are almost invariably unsymmetrical.

Allied to this condition is that rare affection, *unilateral atrophy of the face,* in which all the structures of one side of the face are involved, and which is supposed by some to be due to permanent irritation of the cervical sympathetic. Brunner* gives the case of "a Jewish lady, twenty-seven years of age, who, during pregnancy, had an attack of convulsions with loss of consciousness, and afterwards repeated epileptic seizures. For a long time these attacks followed regularly on each faradisation of the facial muscles, and were ultimately associated with difficulty of breathing and palpitation. In the course of four years an atrophy of the left side of the face was gradually developed, the hair of the head and the eyelashes became grey, and several yellow and white spots appeared on the skin, which afterwards assumed a yellowish-brown or brown colour. There was also a feeling of pressure and cold in the left eye, pain in the whole left side of the face and in the jaw and throat, violent pain in the neck and chest as far down as the region of the stomach—the latter sensations presumably only on the left side. The frontal and temporal muscles were found to have almost completely disappeared, and the zygomatics and the other muscles of the angle of the mouth, of the nose, and lips were more or less atrophied, and some of them at the same time contracted; their electro-muscular contractility was intact. The external part of the left ear was, on the whole, much thinner, smaller, and cooler than that of the right. The left eye appeared larger than the right, *the palpebral fissure wider, and the eyeball more prominent, the pupil more dilated and sluggish in its action.* The conjunctiva was rather pale, its vessels being sparingly filled with blood; the secretion of tears and mucus was diminished. The skin of the whole face was very thin and dry, and the subcutaneous fatty cellular tissue almost entirely absent. One side of the face was always paler, even when reddened by heat, cold, or mental changes; it took almost no part in perspiration, only the nasal fold being somewhat moist. The temperature in the right side of the mouth was 0·2° C. higher than in the left, and in the right auditory meatus about 1° higher than in the left. There was pain on pressure on the left ganglion cervicale supremum, but none on the right; pressure on the ganglion cervicale medium on both sides produced slight pain. The heart-sounds were clear, but irregularly accentuated, the same being the case with the carotid sounds; frequency of pulse variable—86 to 100 in the minute."

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* Quoted from *Physiology and Pathology of the sympathetic system of nerves,* by Drs. A. Eulenburg and P. Guttmann, translated by Dr. A. Napier, page 75. Churchill, 1879.

An interesting case of a similar nature was under my care some time ago in the Western Infirmary of Glasgow. This patient, a lad aged sixteen and a half (I quote from the report of my late assistant, Dr. Charles J. Plumer), was admitted on January 26, 1875, complaining of partial falling of the hair, with occasional sensations of stinging and formication in the skin of the scalp, and increasing distortion of the face, of eighteen months' duration. The patient, who was very tall for his age, and rather thin, but otherwise healthy in appearance, stated that he had always enjoyed good health, with the exception of scarlet fever when fourteen years old, from which he made a good recovery. His occupation, that of an engineer, was laborious, and entailed exposure to alterations of heat and cold; but he had always been well cared for, and his habits were temperate. Eighteen months before admission the hair began to fall out from the middle and anterior part of the scalp; and about eight months later, he noticed that the skin of the middle of the forehead was somewhat thinner and paler in colour than that covering the rest of the face—the contrast in colour being most marked in cold weather. At this time, also, he began to be troubled with creeping and pricking sensations in the scalp. This change in the appearance of the skin extended downwards gradually over the front of the nose, and to the chin, and the nose became slightly drawn to the left side.

On admission, his general health was good; but slight comparative dulness and some roughening of the respiratory murmur were detected at the apex of the right lung in front, and also at the right shoulder. A portion of the scalp (extending from near the crown forwards, about two inches broad and three inches and a half antero-posteriorly) was denuded of hair; on this part and over the forehead, a little to the left of the middle line, the skin to the breadth of an inch and a half, was decidedly paler in colour, less easily moved by the subjacent muscles, thinner, and less easily pinched up, and showed more distinctly the inequalities of the bones beneath, than that covering the surrounding parts. The same change was observable on the front of the nose and on the left side of the chin. The nose was drawn slightly to the left side; the left eyebrow was paler in colour and less bushy than the right; the left side of the chin, and indeed the whole left cheek, appeared smaller than the right; and the portion of the tongue on the left side of the dorsal furrow was both narrower and thinner than that on the right. The comparative sensitiveness of the skin on the two sides of the face was carefully tested (by Dr. Knox), with the following result:—

Parts supplied by the		Distance between the points of compasses, when *two points* could be distinctly felt by the patient on the	
		Right side.	Left side.
Supra-orbital	Nerve,	$\frac{12}{16}$ths inch.	$\frac{11}{16}$ths inch.
Nasal	,,	$\frac{15}{16}$ths ,,	$\frac{13}{16}$ths ,,
Infra-orbital	,,	$\frac{8}{16}$ths ,,	$\frac{8}{16}$ths ,,
Mental	,,	$\frac{8}{16}$ths ,,	$\frac{8}{16}$ths ,,
Auriculo-temporal	,,	1·$\frac{6}{16}$ths ,,	$\frac{15}{16}$ths ,,
Buccinator	,,	1·$\frac{6}{16}$ths ,,	$\frac{14}{16}$ths ,,
Tongue and side of lip,		$\frac{7}{16}$ths ,,	$\frac{6}{16}$ths ,,

It was also found that the interrupted galvanic current could be more distinctly felt on the left side of the face generally than on the right, but as well on the affected portions of the skin (excepting the scalp) as on the sound parts of the left side.

No affection of the cornea could be discovered, and he could read equally well with both eyes; nor were the other special senses at all impaired.

Under this section must be classed the atrophic lesions of the skin noticed by Dr. Kaposi (in Hebra's *Diseases of the Skin*, vol. iii., 1874, translated by Mr. Warren Tay, and published by the new Sydenham Society), who says:—"White scar-like streaks and spots, round or oval, varying in size from that of a bean to that of half-a-crown, are occasionally met with in women who have never been pregnant, and also in men. . . . By the touch, we detect that these streaks and spots are somewhat depressed below the level of the surrounding skin, and that where they occur the skin is thinned. If a finger be passed over the affected part, we obtain the impression that the portions corresponding to the atrophied streaks are situated in a depression or furrow of the skin. . . . They are most frequently met with in the neighbourhood of the anterior brim of the pelvis, over the gluteal muscles, and in the neighbourhood of the trochanters; less frequently on the anterior surface of the thigh, and on the extensor surface of the arm." On microscopic examination, he found "the epidermic and mucous layers very much atrophied; the latter lay flat on the corium; after addition of acetic acid, the Malpighian layer separated in its entirety from the corium, the surface of which showed a uniform contour without any conical projections. The separated mucous layer showed a similar flat surface, unprovided with depressions for the papillæ, towards the corium. The papillæ, therefore, had entirely vanished. The net work of connective-tissue and elastic fibres consisted of very thin bundles, between which only extremely few and slender blood-vessls existed." The subcutaneous fat-lobules were devoid of fat-cells; the acini of sebaceous glands were indicated only by isolated roundish nests of molecular, yellowish-brown masses; one or two attenuated hair follicles were found, with fine hairs, whose root-sheath was made up entirely of flat epidermic lamellæ. No trace of the cells of the outer root-sheath was made to be seen; and there was no indication of any sweat-gland.

B. S. Schultze, who examined several hundred cases, found that in 36 per cent. of women who had never been pregnant, or who were not far advanced in pregnancy, and in 25 per cent. of tall men, the streaks existed upon the thighs and buttocks. He is, therefore, of opinion that the rapid growth of the pelvis causes this partial atrophy, by stretching the skin; that in women, in whom the pelvis increases chiefly in breadth, streaks occur, having a direction chiefly parallel to the long axis of the body; while in men, in whom the pelvis increases rather in length, the streaks take an oblique course.

The **treatment** of atrophy of the skin need not, unfortunately, detain us long, seeing that we are nearly as ignorant of appropriate therapeutic measures as we are of the nature of the affection. In all cases the state of the general health must be carefully inquired into, and any deviation from the normal corrected, if possible. Nerve tonics are generally indicated as nervous debility is often present, amongst which may be mentioned strychnia, phosphorus, and, above all, arsenic. In the localised forms stimulating applications may be used, such as a liniment composed of equal parts of chloral and champhor, faradisation with the wire brush, and painting the part from time to time with blistering fluid. In exceptional cases, spontaneous recovery takes place.

3. ANOMALIES OF PIGMENTATION.

The colouring matter, or pigment of the skin, as is well known, is chiefly situated in the mucous layer of the epidermis. If it be present in excess, the skin is proportionately darkened; if defective, it is unnaturally white.

(*a.*) Defective Pigmentation.

The most important variety of this is *Albinismus.* In this condition there is congenital absence of colouring matter in the skin, hair, iris, and choroid. The skin is milky white, the hair white or yellowish-white, and generally long, fine, and silky, and the iris is rose-coloured, the pupil being red. Under these circumstances, there is intolerance of light (hence the iris is contracted, and the Albino walks with the head downwards), and nictation and oscillation of the eyeballs (nystagmus) are observed. Such persons are usually feeble and short of stature. This deformity is met with in all races, but most frequently in people of colour, especially among the negroes of the South.

(*b.*) Excessive Pigmentation.

This may be primary or secondary.

1. PRIMARY PIGMENTATION.

(*a.*) Lentigo (*Freckles*).

Lentigo (lens, a lentil) is a very circumscribed collection of pigment in the mucous layer of the epidermis, the result of some obscure perversion of innervation. The deformity to which, in well marked cases, it gives rise, is so well known as to require no description at our hands. It is rarely met with in children under five years of age (except when it constitutes the first stage of that rare disease xeroderma pigmentosum—see New formations), and is not generally observed after middle life. It is most apt to appear in persons with delicate skins, and in those who have fair complexions, but, above all, in red-haired people. It is always aggravated by exposure to the sun, hence it is met with on the face, neck, and hands more particularly, and is most pronounced during the summer months. But it is a mistake to suppose that it disappears in winter, for, as has been remarked by Hebra,* if we put the skin upon the stretch, and examine it closely, in a good light, we can satisfy ourselves of the persistence of the pigmentary spots, although they are not nearly so distinct as in summer. It cannot be mistaken for any other affection.

The **treatment** of this condition is similar to that for ephelis, about to be described, although it is only in extreme cases that the more severe remedies are justifiable—and it must never be forgotten that the subjects of it should carefully avoid unnecessary exposure of the parts to the sun during the summer months.

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* "On Diseases of the skin," by Ferdinand Hebra, M.D. *New Sydenham Soc. translation*, vol. iii., p. 8, 1874.

(*b*.) Ephelis (*Chloasma*).

This is a more diffused form of excessive pigmentation, and must not be mistaken for the vegetable parasitic affection—tinea versicolor—to be described later on, a mistake which is all the more likely to occur, seeing that the term chloasma is by some authors applied to the former, by others to the latter. It is most frequently met with in women during pregnancy, and also in unmarried females between the ages of thirty and the cessation of the menses, as the result of disordered menstruation and of diseases of the sexual organs of the most diverse kinds (chloasma uterinum). It has the appearance of a dirty yellow or brown discoloration, generally implicating the face, and often extending across the forehead from temple to temple, and from near the eyebrows to near the roots of the hair. The edge of the discoloration is most frequently abrupt and darker than the centre, and there ought to be no difficulty in its diagnosis. If we were to be guided by statistics, we would have to conclude that ephelis is a rare affection, for amongst 12,000 cases of skin disease, it was only met with eleven times, but, as a matter of fact, it is a very common variety, but one with regard to which we are rarely consulted, and then almost exclusively by the upper classes of society.

Treatment.—In cases of this kind careful attention must be paid to the general health, especially to the state of the sexual organs, any deviation from the normal being corrected just as we would do if there was no abnormal pigmentation present. If we succeed in this, the ephelis sometimes disappears without further treatment.

As a general rule, however, local treatment is likewise required, our aim being to cause the removal of the epidermis of the affected part, including its mucous layer, in which the deposit of pigment is seated, in the hope that the new epidermis will not be abnormally pigmented. As has been pointed out by Hebra,* some local applications—such as mustard, cantharides, and croton oil—are apt to be succeeded by new epidermis which is more deeply pigmented than that which it has replaced, and are therefore to be avoided; while others—some of which are about to be mentioned—have exactly the opposite tendency. Amongst those which act slowly, and are not always to be relied upon, may be mentioned weak solutions of the perchloride of mercury,* and ointments containing bismuth and ammonio-chloride of mercury.† Another preparation which is more efficient, as a rule, is the tincture of soft soap, to which perchloride of mercury may be added.‡ This may be applied every night, and washed off in the morning, or, if a speedier result is desired, cotton wool dipped in the solution may be applied continuously for several days, or as long as the skin will tolerate it. This may be repeated, if necessary, from time to time, until the new skin appears uncoloured. The same result may be obtained from the use of sulphur ointment, or from painting the part daily with liniment of iodine for several days, or until decided irritation results. Finally, if we wish to remove the discoloration with all speed, we may moisten the surface once with pure carbolic acid; or we may use a solution of perchloride of mercury, of the strength of 5 grains in an ounce of alcohol, as recommended by Hebra.§ The following are his directions for carrying out this treatment:—"Place the patient in bed, prepare compresses closely fitting on the affected parts, . . . and, after the face, for instance, has been cleansed previously by washing with soap, the soap removed with water, and the face thoroughly dried, we apply the compresses, dipped in the above-mentioned fluid, so that they are not creased, but lie firmly and smoothly. We have then to be careful that no stratum of air insinuates itself between the skin and the compresses." These are kept continuously and uniformly wet by moistening the compresses from time to time with the fluid, without displacing them, taking care that none runs into the eyes or upon unaffected portions of the skin. The compresses are removed in four hours, when the skin is found to be either

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* *Op. cit.*, p 21.

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*℞ Hydrargyri perchloridi, ...	gr. xij.
Sp. rectificati, ...	℥i.
Glycerini (Price), ...	ʒvi.
Aquæ rosæ, ...	℥v. —*Solve.*

Sig., Sponge the parts night and morning, omitting it from time to time, if the skin tends to become inflamed and to desquamate.

† ℞ Hydrargyri, ammoniati.	
Bismuthi subnitratis, āā, ...	ʒij.
Axungiæ, ...	℥i. —*M.*

Sig., Apply to the affected parts—spread upon pieces of lint—and keep on all night at least.—*Hebra.*

‡ ℞ Saponis viridis, ...	℥ij.
Sp. rectificati, ...	℥i.
Solve, filtra et adde.	
Hyd. perchloridi, ...	gr. vi.
Sp. lavandulæ, ...	ʒi.
	—*Solve.*

§ *Op. cit.*, p. 22.

reddened or blistered. In the latter case the fluid is let out, and in any case the surface is dusted with starch powder. The new epidermis, which subsequently forms, is always found to be lighter than that which preceded it.

It will thus be seen that the application which we select must depend upon whether a speedy result is desired, and which generally entails withdrawal from society while the treatment is being carried out, or whether the patient is content with less heroic treatment, and slower and less certain results. And, it must be added, that some skins are much more sensitive than others, and therefore it is well, in most cases, to feel our way with the milder remedies in the first place; and, when the stronger applications are resorted to, we should take our patient into our confidence, and explain the aim, and probable result, of our medication.

(*c.*) **Melasma caloricum,**

as the name implies, has reference to pigmentation of the skin, as the result of prolonged exposure to heat, either of the sun, or of the fire. All are familiar with the brownish discoloration, resulting from exposure of uncovered parts to the influence of the sun's rays, although it is perhaps not so well known that those who are in perfect health bronze much more readily than those whose constitutions are unsound, or who are sickly.

The pigmentation of the skin, which results from exposure of uncovered parts to the heat of the fire, generally assumes the form of streaky brown stains coursing through skin which is of the normal colour, and breaking it up into irregular islets, thus giving to the surface a marbled appearance. It may be met with on any part which has been long subjected to the influence of heat, but is oftenest seen on the backs of the hands and wrists and arms, and, above all, over the shins—especially in females, who love to sit "toasting themselves at the fire." If the patient is tainted with syphilis, the discoloration is apt to be very pronounced and dark, a beautiful illustration of which—under the name of melanopathia syphilitica—is to be found in Wilson's *Portraits of Diseases of the Skin* (Plate xxxiv., M.), but generally it has no connection with syphilis whatever, and he would be a bold man who would diagnose that disease from the presence of such pigmentation alone, no matter how intense it might be.

It is unnecessary to say anything with regard to treatment, as we are rarely consulted about this condition. It usually disappears, sooner or later, after the exciting cause has been removed, but, if not, and if it is on a conspicuous position, and a source of annoyance, it may be treated on the same principle as ephelis, to which the reader is referred.

(*d.*) **Nævus pigmentosus** (*Nævus spilus—Pigmentary mole*).

Moles, as they are popularly termed, are sometimes congenital or nearly so, constituting one of the varieties of "mother's marks," and sometimes acquired. They occur in the shape of circumscribed brown patches, often as small as split-peas, and on the face, in the gentler sex, are often regarded as beauty spots; but sometimes they are of considerable size and irregular in outline, and may even follow the course of certain nerves, when they are generally situated on covered parts. Not unfrequently, owing to hypertrophy of all the tissues of the skin, they are distinctly elevated, and hairs in greater or less abundance grow upon them (nævus pilosus). In advancing years moles are not always harmless, as they may become the seat of malignant disease, especially if irritated.

Treatment.—When they are situated upon covered parts no one would think of interfering with them, and even when the face is involved it is generally advisable to let them alone, for if they are small they often adorn it, while if they are large there is a risk of leaving scars which are about as disfiguring as the deformity itself. It is, therefore, only in very exceptional cases that treatment is resorted to. This may consist of moistening the part with Richardson's solution of ethylate of sodium—a syrupy fluid of the colour of brown vinegar, prepared by dissolving metallic sodium in absolute alcohol—and repeating the application, whenever the effect of the last has passed off, until the mole has disappeared. Or it may be removed by the knife, or by caustics, such as potassa fusa, or scooped out with a spoon (Waren Tay), such as is used in the treatment of lupus. (See treatment of lupus.)

(*e.*) **Vitiligo** (*Leucoderma*).

These names are applied to an affection characterised by an absence of pigment at certain parts surrounded by portions of skin in which it has accumulated to an excessive degree, so that brown patches are seen enclosing white ones; in fact, there is rather an irregularity in the distribution, than an actual defect in the quantity of the pigment. The dark skin gradually shades off into the normal colour of the surrounding parts, but where it meets the white patches the edge is abrupt. The white spots are at first circular in form, but as they increase in size they are apt to become oval, and, as neighbouring ones unite, they assume an irregular outline. As the affection advances the patches devoid of pigment may become very extensive and even involve almost the whole of the body, a rare condition to which the term leucoderma is most approprately applied. It is generally, however, more or less localised, the hands, face, and neck being probably the parts most frequently invaded; and, when hairy parts are involved, the hair growing from the white patches is devoid of pigment and white. It is most commonly met with in persons of colour, in whom the contrast between the white and brown parts is very striking, giving a piebald appearance to the skin (see Figs. 1 and 2). There are some who hold that it is a congenital affection; but this is contrary to my experience, as I have never seen it in children. In this country it is by no means frequent, only seven instances having been met with amongst 12,000 consecutive cases of skin disease. It seems, however, to be more frequent in Vienna, Hebra's statistics showing 2 per 1,000. There is much obscurity surrounding the etiology of this curious abnormality; but there can be little doubt that it is a neurotic affection, and probably dependent upon perverted innervation of the sympathetic nerve.

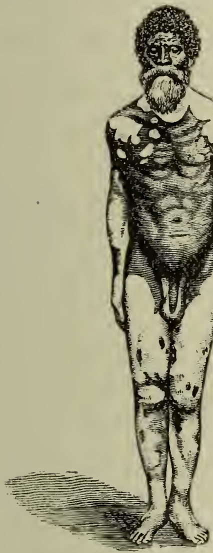

Fig. 1.

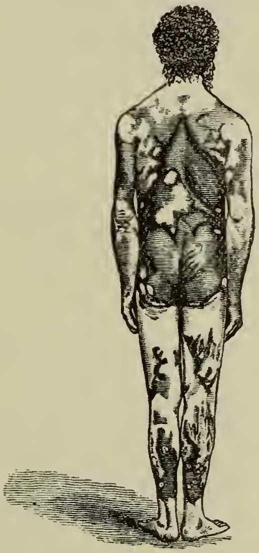

Fig. 2.

This view has found recent support from the experiments of Professor Lizzoni upon the supra-renal capsules of rabbits, which corroborate in a very unexpected manner the opinion given by me some years ago,* that there is a relation subsisting between the discoloration of the skin in vitiligo and that of Addison's disease, which is now all but universally considered to be a neurotic affection. The contents of the capsule on one or both sides were evacuated without the animals appearing, as a rule, to suffer in general health; their nutrition was rarely affected, indeed there was generally an increase of weight in about a week after the operation. But after the lapse of about a month—except in the case of white rabbits—a brown discoloration of the muzzle, and later on of the mucous membrane of the mouth and nose was observed, beginning in the shape of small spots, which gradually increased until they coalesced. When only one capsule was removed the pigmentation appeared chiefly or exclusively on the side operated upon. This abnormal distribution of the pigment was the sole result of the experiments, none of the other symptoms of Addison's disease being produced.* When I come to speak of alopecia areata (circular patches of baldness) reference will be made to the apparent relationship between it and vitiligo.

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* *Glasgow Medical Journal*, 1879.

The exciting cause is sometimes apparently a lesion of some kind, thus Lecat once met with a case in a negro after a burn, and Hamilton after a surgical operation. In all the cases reported the discoloration commenced at the seat of the lesion, and the following case, which came under my notice some years ago, is no exception to this rule. This patient was a domestic servant, twenty-seven years of age, who, without questioning, volunteered the following statement as to the origin of the complaint:—"About eight years ago, whilst working in a hay-field, I was struck on the back of the head by a fellow-worker so forcibly as to drive a hair-pin into my head." About a year after this her attention was called by a companion to a patch of grey hair on the back of her head; and, on close examination, the scalp in this situation was found to be white in colour. Shortly after this she noticed many white spots on the sides of her neck. On examination of the patient, a swarthy-looking Irishwoman, the following appearances were noted:—On the occipital region and upper portion of the neck, in the median line, the hair, to the extent of nearly four inches in length and two in breadth, was quite grey, and the skin from which it grew of a clear, white tint; while at the edges of the patch, which was irregular in form, the skin was much darker than the healthy skin in the vicinity. On the sides of the neck above the clavicles were two patches four inches long and one broad, presenting exactly the same characters minus the hair. Similar patches, varying in size from that of a threepenny piece to a florin, were seen on the chest and right arm.

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* *Gazz. degli Ospitali*, June 22, 1884.

Her general health appeared to be excellent. The formation of new patches, which was going on at first, was arrested, and some improvement in the existing ones was observed, under the influence of Fowler's solution in small doses continued for some months.

Hebra has called attention to the fact that not unfrequently the first whitening commences close to a previously-existing pigment-mole, although what the casual connection between the two may be it is difficult to conceive. The affection is not limited to the human subject, but may appear also in the lower animals. "It arises," writes Kaposi, "after early life, spreads from isolated centres, and steadily progresses in a peripheral direction, and is characterised by a whitening of the skin and of the hairs. Some years ago a horse of an excellent breed, belonging to the royal stud here, became unsuited for use as one of a set, owing to such an 'acquired' piebald appearance. In this animal, the spots were of exactly the same character as those met with in men, and were very striking, because the hairs corresponding to them turned grey." *

Diagnosis.—Some cases of true leprosy may be mistaken for vitiligo, seeing that we often encounter in the former affection white, surrounded by brown patches of skin. The following table, however, should help to distinguish them:—

Vitiligo.	**True Leprosy.**
1. Met with in all parts of the world.	1. Met with in those who are, or who have lived, in a leper district.
2. General health unaffected.	2. Accompanied by increasing deterioration of general health (see leprosy).
3. White patches, roundish, and of a dead-white tint.	3. These usually irregular in outline, and of a greyish tint.
4. No alteration in the structure of the skin.	4. Skin altered in structure; thickened or atrophied and depressed.
5. Sensation normal.	5. Often anæsthetic.

(For the diagnosis of vitiligo from tinea versicolor, see the latter disease.)

Treatment.—The results of treatment have not proved very encouraging, so that it is well that not unfrequently spontaneous amelioration occurs. The apparently neurotic character of the affection naturally leads one to recommend the administration of nerve tonics, such as phosphorus, strychnia, and, above all, arsenic; although we must not be too sanguine as to the results. With regard to local treatment, the most we can do is to modify the colour of the pigmented parts of the skin, in the same way as recommended in the treatment of ephelis (see p. 25). Sometimes galvanism is of use, one of the sponges being applied over the seat of the disease.

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* "On Diseases of the Skin," by F. Hebra and M. Kaposi. *New Syd. Soc. translation*, vol. iii., p. 181. London, 1874.

(*f.*) **Morbus Addisonii** (*Bronzed skin disease*).

This disease is described among the pigmentary affections, because, although undoubtedly due to organic disease, excessive pigmentation is the only cutaneous manifestation. It is named after Addison, its discoverer (whose monograph *On the Constitutional and Local Effects of Disease of the Supra-renal Capsules* was published in 1855), and, in connection with it, one of the most striking phenomena is the pigmentary discoloration of the skin, which in typical cases, as has been well remarked, gives to the unfortunate sufferer the appearance of a mulatto, or of a bronze statue with the gloss removed. The discoloration may implicate the whole of the skin, or only portions of it, in which case there is a gradual shading off of the brown colour into that of the surrounding healthy surface. It is most frequently met with and most pronounced, as a rule, on the hands, face, neck, axillæ, and groins, and where the skin is naturally dark, as on the penis, scrotum, nipples, and areolæ: on the discoloured parts patches or specks of a darker colour like little moles are frequently observed. By stimulating the skin, as by applying a mustard-poultice, or by abraiding it, as after the application of a fly-blister, the brown colour is intensified, but if the cutis vera be destroyed, and along with it of course the mucous layer of the epidermis which is the seat of the pigment, the cicatrix is perfectly white. It often happens that the hair too is implicated, becoming coarser and darker, and similar discolorations are frequently met with on the mucous membrane of the lips, gums, cheeks, and tongue; but there is no alteration in the colour of the conjunctiva or of the urine, so that there is no likelihood of the disease being mistaken for jaundice. It is right to mention—and this fact is not sufficiently well known—that the discoloration in Addison's disease may be of a patchy character, and identical with that met with in vitiligo, which we have just described.

This is illustrated by the following case:—On the 4th April, 1872, a married man, fifty years of age, came to me complaining of frequent seminal emissions, and of a slight eczematous rash on the upper arm, with erythematous blotches on the chest. Even at that time he was very pallid. Under a course of iron, &c., he soon recovered. I lost sight of him until August 8, 1876, when he again came to me complaining of debility, which had been increased by an attack of diarrhœa. I found him very weak, and with a feeble circulation. It was then that I observed that there was a dirty pallor of the skin, contrasting strongly with the pearly conjunctivæ, and he told me that he had been very closely confined to business in badly ventilated rooms. On the 3rd May, 1877, I saw him again, when all the previous symptoms were present in an exaggerated form, and, in addition, there was a great tendency to vomiting. On the 25th July he again complained of vomiting, and his bowels were inclined to looseness. At this time I noticed that the dusky tint of his skin was much more pronounced, and that on some parts, particularly upon the backs of the hands and arms, the discoloration presented all the characters of vitiligo, that is to say, there were white patches, surrounded by others which were deeply pigmented. I saw him for the last time on the 4th September, when he was much in the same state, shortly after which I went abroad for a few weeks, and he then consulted my friend, Dr. Maclaren, who wrote me as follows regarding him :—

"I only saw him during the last week of his life, when the usual symptoms of the disease were well marked—great langour (he was entirely confined to bed), anæmic discoloration of the skin, with white patches here and there, loss of appetite, weak pulse, and vomiting. He sank from sheer exhaustion."

He died about the end of October, and we were fortunate in being permitted to have a partial *post-mortem* examination, which was conducted by the late Dr. Foulis. The following is that gentleman's report (permission was given only to examine heart, capsules, and kidneys) :—

"**Heart** rather flabby; tissue of a pale brown tint; no vascular lesion.

"**Kidneys.**—Both had the characters of the large white kidney of Bright.

"**Capsules.**—Both converted into white, firm, reniform bodies, embedded in adipose tissue. On section the capsules presented a pale, yellowish-white surface, mottled here and there with pale grey and yellow tints. No trace of the normal texture of the capsule remained. On microscopic examination the structure is seen to vary in different parts. In one place a dimly granular, fibrous tissue is visible. In another, there is nothing but closely packed and rather shrunken small cells, rather less in size than the ordinary white blood corpuscle; while elsewhere these cells are obscured by a fine granular debris, as if they were disintegrating."

But, while in vitiligo the general health is usually perfect, in Addison's disease there are invariably constitutional symptoms, which are striking and characteristic, and generally precede the discoloration. There is gradually increasing weakness and debility; there is breathlessness on exertion; the pulse and heart-sounds are very feeble, and the apex beat may be imperceptible; and, as the disease advances, to these symptoms are added anorexia, nausea, and vomiting, which may be persistent, or occurring on the slightest exertion, and faintness is readily induced. Diarrhœa is common. But with all this there is usually no emaciation and little or no fever, while sometimes the temperature is subnormal.

This disease is much more frequent amongst the lower than amongst the upper classes, and in males than in females (nearly 2 to 1), and it usually makes its appearance in early adult life.

The lesion most usually met with on *post-mortem* examination is scrofulous disease of the supra-renal capsules, hence we are most likely to encounter it in strumous families. But there is good reason for agreeing with Dr. Greenhow in the opinion that the symptoms are not dependent upon the destruction of these bodies, seeing that they may be entirely destroyed from other causes without their production, but upon the extension of the morbid process to neighbouring parts, especially the solar plexus and semi-lunar ganglia. Further support is given to this view from the circumstance that disease of other parts, by extension to these nerve-centres, is capable of giving rise to symptoms of Addison's disease, as in the following case:—

"Robert M'L., aged sixty, a zinc worker, was admitted to Ward VII. of the Glasgow Royal Infirmary" (under the care of Dr. Wood Smith*) "on 29th September, 1879. He complained of vomiting immediately after he swallowed his food. He also spoke of a dull, constant pain in the epigastric region, immediately behind the apex of the ensiform cartilage. On examination, the skin of the body and limbs showed large irregular dark brown patches. These patches, which were best marked on the anterior surface of the abdomen and thighs, were in some places well defined at the edges, but at others the colour seemed to fade imperceptibly into that of the surrounding skin. Some of these patches had also spots of silvery-white colour. The mucous membrane of the mouth was not discoloured. He appeared to be much emaciated. The respiratory system was found to be normal. The heart-sounds were irregular, and the second sound was rough and accentuated. Pulse was sixty-four. His temperature, on admission, was 97°·2 F. He complained occasionally of a chilly, creeping sensation, which he said was constantly present.

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* *Glasgow Medical Journal*, p. 73, January, 1880.

"If he took food, whether solid or liquid, he never retained it for more than a few seconds, and it came back in exactly the same condition it was in when swallowed. This state of affairs, the patient stated, had lasted a month, and during that time he had lost a deal of flesh. The dark brown patches had been present for nearly twenty years. Their appearance had not been attended by any illness, and, in fact, he remained a strong healthy man until the latter end of August last, when the vomiting commenced. He died on the 8th October."

Two days later a *post-mortem* examination was made by Dr. Foulis, the notes of which are as follows:—"The body is much emaciated. The thighs, arms, lower part of belly, axillæ, feet, head, and neck, present a dingy brown discoloration, disposed in irregular meandering patches, on which appear a number of smaller patches of nearly pure white colour. There are no white patches on the head and neck. The mucous membrane of the mouth does not seem to be discoloured. On opening the body, the serous membranes appear to be free from inflammation; the small intestines, however, have a dirty maroon colour, as if from *post-mortem* discoloration. The lungs are slightly emphysematous, but are otherwise normal. Heart is normal in size and structure. On opening the abdomen, the first thing noticed is that there is a hard mass at the cardiac orifice of the stomach, extending to the gullet, but not into it. On opening the stomach, this mass presents a dull red, and partly ulcerated appearance. Pancreas does not appear to be involved in the hard mass, but two or three lymphatic glands in the vicinity are hard and slightly enlarged. No other cancer can be detected. The pylorus and bowels are normal; liver, gall-ducts, and spleen are normal. . . .

"The cancerous mass in the stomach is 2½ inches in diameter, and is a circular patch with the cardiac orifice in the middle, and in places is ½ inch thick. It is of a dull red colour, mottled with lighter tints, and the surface is here and there eroded. Its edges are raised, smooth, nodular, and firm.

"On minute examination and dissection a considerable cicatricial thickening is found in the left solar plexus, matting the parts together. The right semi-lunar ganglion is also thickened, and there are hard nodules of fibrous consistence all round the left renal vein. The supra-renal capsules, however, do not seem to be directly involved, and are not thickened or enlarged." (See Figs. 3 and 4).

It is admitted, on all hands, that the prognosis of Addison's disease is gloomy in the extreme, and *treatment* has consisted exclusively in attempting to subdue special symptoms, such as irritability of the stomach, and to improve the strength of the patient by means of

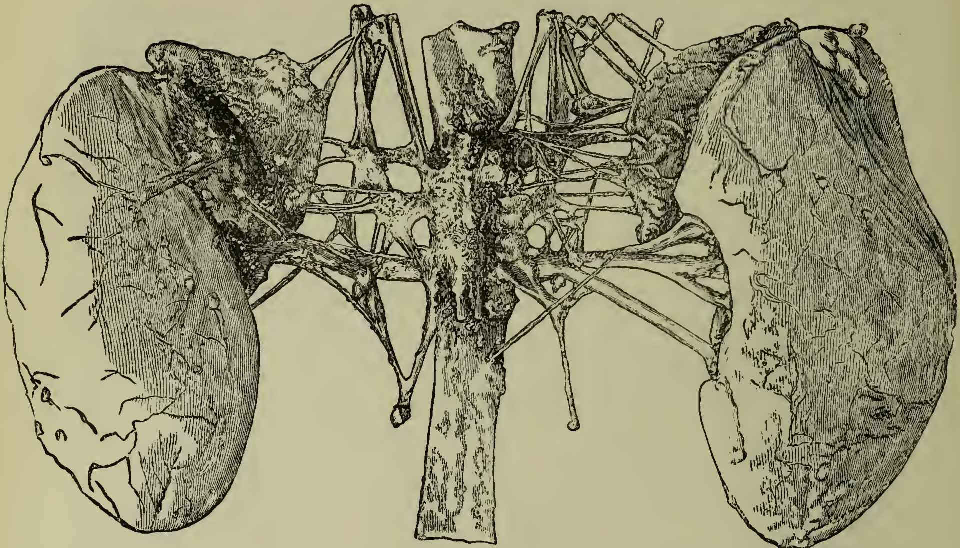

Fig. 3.—Dissection of normal parts—kidneys, supra-renal capsules, solar plexus and nerves, and semi-lunar glanglia.

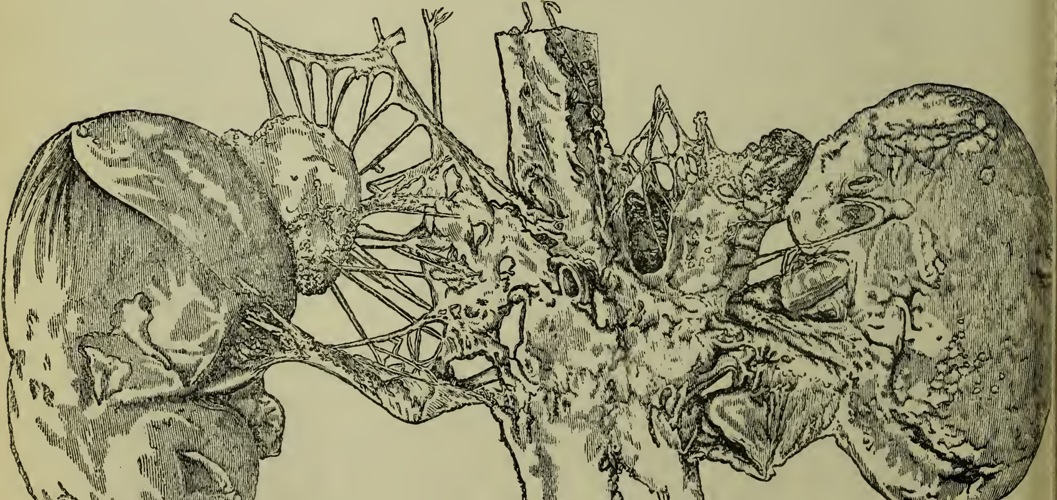

Fig. 4.—Addison's disease (cancer of stomach; recent), old fibrous thickening of left side of solar plexus, matting together lower end of left supra-renal capsule, left ureter, &c.; slight thickening also of nerve sheaths on right side.—(*D. Foulis.*)

nourishment, stimulants, and tonics. On reflecting on the very unsatisfactory results which have accrued from this palliative and symptomatic treatment of the disease, it occurred to me that a somewhat different treatment might possibly be occasionally of service, or at all events, that it could not well be less satisfactory than the usual routine. I reasoned thus:—Addison's disease has now been proved to be generally dependent upon a scrofulous affection of the supra-renal capsules. Now, when a localised scrofulous affection attacks any other part of the body, we treat it constitutionally by means of anti-strumous remedies, and by strong local applications if it is on the surface, or by stimulants or counter-irritants, in some shape or other, if more deeply placed. Then why not resort to similar treatment when the supra-renal capsules happen to be the seat of disease? The following is a case treated in this way:—A lad, aged nineteen years, a wood-turner, was admitted under my care into the Western Infirmary of Glasgow on 16th July, 1878, suffering from loss of appetite, extreme langour, and debility. He seemed to have come of a tolerable healthy family, although his brother suffered from some form of lung affection. He was always strong and well until about five months prior to admission, when his appetite began to fail. He lost all inclination for food, and was inclined to sleep, or to sit languidly at the fire-side. Exertion of any kind was very distressing to him, and he gradually lost flesh. Shortly after this, his friends began to remark that his skin was becoming darker in colour, although he was always somewhat swarthy. There had been no change, however, in his hair, either as regards texture or colour; and although anorexia had been a prominent symptom, he had never suffered from nausea or vomiting.

On admission, he was found to be considerably emaciated—weight, seven stones and a quarter of a pound. The whole skin was of a dirty brown tint, and decidedly darker than natural; this was especially marked in those situations which are naturally most pigmented, such as the scrotum, penis, nipples, &c. The anterior was, on the whole, somewhat lighter than the posterior aspect of the body; the vaccination marks on the left arm were in parts very dark, and there was a large dark patch on the front of the chest, where a mustard plaster had been applied some time previously. There was no discoloration of the mucous surfaces, which were pale.

An examination failed to detect any disease of internal organs; there was neither pain, tenderness, nor fulness in the region of the supra-renal capsules, and the urine was natural. Pulse 96, rather weak; respirations, 24; temperature ranging from 98·2 to 102°—which, however, it only reached on one occasion, and for the most part it remained within the limits of health. I need not enter into the diagnosis of this case. It was admitted by all who had an opportunity of seeing it, to be a well-marked illustration of Addison's disease in the early stage.

He was treated by means of blisters over the renal regions and cod-liver oil, combined with rest and good food, and four ounces of wine daily. The oil was commenced on 16th July, in doses of a teaspoonful, gradually increased to a tablespoonful thrice daily. From the middle of September onwards, from two or three ounces were administered daily. Three blisters were applied to the right renal region, on the 23rd July, 30th August, and 30th October, and two to the left, on the 3rd August and 15th September. On the 20th October, the following note was taken:—"Patient is a very great deal stronger; he walks rapidly with a firm step, as if in perfect health. But he states that he still feels a little weak, though not half so much so as on admission." His colour also was much paler; a fact which was corroborated by the patient himself, as well as by others in the same ward. The most remarkable improvement, however—one with regard to which no doubt could exist, and which is the most striking sign of amendment in strumous affections generally—was in body weight, as is shown by the following table:—

	Stones.	Lbs.
July 22,	7	0¼
„ 29,	7	0½
Aug. 5,	7	2
„ 12,	7	2¾
„ 21,	7	5
Sept. 2,	7	9
Sept. 9,	7	10
„ 16,	8	0
„ 23,	8	0
Oct. 7,	8	8
„ 14,	8	10
„ 21,	8	11

That is to say, from 22nd July to 21st October, he gained 1 stone 10¾ lbs. in weight.

I do not bring this case forward as an instance of a cure of Addison's disease, but as an illustration of great improvement, resulting from the carrying out of what we may call a rational, as distinguished from a purely empirical, method of treatment.

2. SECONDARY PIGMENTATION.

This may ensue whenever there is long-continued congestion of the skin, which has a tendency to induce an excessive deposit of pigment in the mucous layer of the epidermis. It may result—

(*a*) *From long-continued and excessive scratching.* In that case the diagnosis can readily be made by a careful inquiry into the history of the case, and by observing the presence of a pruriginoid eruption (to be described later on under the head of the animal parasitic affections) induced by the scratching.

Or (*b*) it may result *from a previous eruption.* In such a case we have the history of the preceding eruption to guide us, while the shape and situation of the stains will correspond to the shape and situation of the previous patches. Thus, after eczema, we may have stains at the flexures of the elbows and knees, while after psoriasis we may have them on the extensor aspects of the same joints.

The stains resulting from syphilitic eruptions are usually more persistent than others, more or less rounded, darker, and more distinctly coppery, or, if there is a cicatrix, it is surrounded by a coppery edge. The coppery tint, however, is not necessarily characteristic of syphilis when seated on the legs, because, owing to their dependent position, and to the frequent complication with varicose veins, stains of previous non-syphilitic eruptions may be very dark.

Finally, (*c*) pigmentary discolorations may result *from applications to the skin,* such as fly-blisters; but in such a case the history, and the seat and shape of the patches, should clear up the diagnosis.

There should be no difficulty in the **diagnosis** of pigmentary from inflammatory discolorations, for in the latter the colour, which is more or less red instead of brown, temporarily disappears on pressure; there is more or less heat or itching; and generally there is some desquamation, and often some elevation.

Treatment.—It is unnecessary to dwell upon the treatment of these secondary discolorations. If they depend upon a cause which is still in existence, such as the scratching in connection with an itchy skin disease, the treatment resolves itself into that of the primary affection; if, on the other hand, they result from a bygone eruption or application, a little of the "essence of time" is generally all that is required for their removal. But, if the pigmentation is obstinate, and if it is situated upon an exposed part, or the patient is urgent for its removal, the local treatment recommended under the head of ephelis (see p. 25), may be resorted to.

II. AFFECTIONS OF THE HAIR.

(*a.*) **Abnormalities in the Amount of the Hair.**

1. EXCESSIVE GROWTH OF THE HAIR—HIRSUTIES.

(*Hypertrichosis.*)

Under this head it is unnecessary to refer to undue length of the hair which can easily be rectified, but we shall confine our observations to its abnormal development and coarseness at parts where it is usually invisible, or only present in trifling amount. It is only occasionally that we are consulted with regard to this deformity, as is shown by the circumstance that amongst 12,000 consecutive cases of skin disease only fifteen persons presented themselves, of whom thirteen occurred among 2,000 private, and only two among 10,000 public cases. But it is a very much more frequent affection than these statistics would imply, for many suffer more or less from it, who are either indifferent to it, or consider it beyond the range of art, or are ashamed to seek advice. This condition may implicate the whole body, though rarely, in which case it is usually a congenital affection, or nearly so; and some races are remarkable for their development of hair, as in the case of "the Ainos in Yesso," north of Japan. The hair of the head in them forms an enormous mass, is very thick, and matted together; their beards are dense and long, and the greater portion of the face is covered with dark hair, and likewise the rest of the body (Beigel). But in the majority of instances it is localised and acquired, making its appearance, as a rule, after puberty. It is chiefly met with in women, in whom it is apt to take the shape of rudimentary whiskers, moustache, or beard, and in them appears often to be connected with derangements of menstruation, or cessation of the functions of the ovaries.

This is analogous to what we find in the case of birds, which, after having ceased to breed, tend to assume the plumage and other attributes of the male. It is common too amongst barren women, and viragos with masculine characteristics, and is more frequently met with in persons of dark complexion. It is said also to be more common in strumous subjects, although there is some doubt as to the accuracy of the opinion, which perhaps has arisen from the circumstance that phthisical subjects often have most luxuriant heads of hair, and are remarkable for their long dark eyelashes. In some cases it seems to result from, or at all events to follow upon, constitutional or local disorders, as in the following case mentioned by Wilson, as having occurred in the practice of Ollivier.* This was the case of a young lady "remarkable for the whiteness of her skin, and for a fine head of jet-black hair; while recovering her strength after a chronic gastro-enteritis, she perceived one day that the entire surface of her skin, both of the trunk and extremities, was raised into small pimples, resembling those produced by cold, and commonly called *goose-skin.* At the end of a few days the pimples presented a small black head, and shortly after they were found surmounted by a short hair, which grew rapidly; so that at the end of a month every part of her body, with the exception of her face, the palms of the hands, and soles of the feet, was covered with a short hairy coat. The individual hairs reached the length of an inch and were closely planted." Finally, in many persons the persistent use of local stimulants or irritants—amongst which, the preparations of cantharides and tar may be specially mentioned—is favourable to the growth of the hair, a circumstance we take advantage of in the treatment of alopecia.

The **diagnosis** is unfortunately only too plain, and requires no comment, and the affection must be regarded rather in the light of a deformity than a disease.

In the **treatment** of hirsuties the first point is to make careful inquiry into the state of the general health, especially with regard to the reproductive organs in the female, and to correct, if possible, any derangement which may be discovered. This having been done, we must direct our attention to local measures. Wilson recommends the administration of "small doses (2 or 3 minims) of Fowler's solution, the local use of the Juniper-tar soap, and active ablutions with cold water." We should be surprised were good results to follow upon such a line of treatment, which, indeed, is the kind of medication often resorted to for promoting the growth of the hair. It will be generally admitted that we must choose between epilation, the destruction of the hair follicles, shaving, the use of depilatories, or doing nothing at all. The objection to epilation is that it is of no permanent effect except as tending to make the subsequent hairs grow more strongly than ever. The destruction of the hair follicles has been attempted by heating needles red-hot and inserting them into the follicles, but this is a painful process, and is apt to leave little scars which are disfiguring. In recent years a much more satisfactory method has been devised by Hardaway, of St. Louis, that of destroying the hair papillæ by means of electrolysis, although it is only applicable to limited areas. "The operation," says Duhring, "consists in the introduction of a fine needle into the hair follicle, and the destruction of the hair papilla by means of the galvanic current. The needle is connected with the negative pole; while the positive with sponge electrode is held by the patient. I use a number twelve sewing-needle, ground down to the finest calibre (which, after many experiments, I have found to be the best) attached to a small holder made in the form of a pocket lead pencil. . . . The needle is introduced before extracting the hair, and allowed to remain in contact with the papilla of the hair and follicle until the hair is found to be so loose that it may be withdrawn upon the least traction. In cases where the base of the follicle has not been reached, the needle should be re-introduced. The hair should never be extracted until it is detached from the papilla and loose.

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* *Dictionnaire de Médecine*, article "Poil."

"The needle is first introduced, and the circuit then made by the patient grasping the sponge electrode; and, to avoid shock, he should not break the circuit until after the needle has been withdrawn. The length of time required for each hair will vary from ten to thirty seconds, according to circumstances. Slight frothing, more or less congestion, and the formation of a wheal, followed sometimes by a small papule, pustule, or reddish spot, occur about the opening of the follicle. If the operation be skilfully performed, no scars, or slight ones only, remain. The amount of pain accompanying the procedure, in my experience, varies with the individual; it may be slight or decided, but is rarely so severe as to be intolerable. . . . Good light is necessary, and where the eyesight is at all defective, or where the strain upon the eye is great and often repeated, a lens will prove of assistance."* From personal experience I can heartily recommend this method of treatment, although, of course, many sittings and much perseverance and patience are required both upon the part of physician and patient. The strength of the current should be from ½ to 3 milliampères, and, in order to avoid scarring, this exact strength should be maintained with the aid of a galvanometer and rheostat, and hairs very close to one another should not be removed at the same sitting.

Shaving has the recommendation of simplicity; but, as the razor only removes the hairs at the level of the skin, their stumps are apparent as black points at the orifices of the follicles, which, of itself, is a disfigurement, and the process requires to be repeated frequently. Depilatories, on the other hand, have this advantage that they destroy the hairs for some distance down the follicles, so that after the operation these black points are not observed, and the hairs are longer of growing again. It is, therefore, quite sufficient to use them at intervals of a week or two. That which I am in the habit of using is composed of perfectly fresh sulphuret of barium, ʒiss; oxide of zinc, ʒvi; carmine, gr. i. Another formula is sulphide of sodium, ʒij; prepared chalk, ʒvi (Duhring). Moriz Kohn recommends the application of an oriental paste as used at the present time by the Jews. Its composition is as follows:—

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* *A Practical Treatise on Diseases of the Skin*, by Louis A. Duhring, M.D. Philadelphia, J. B. Lippincott & Co. Second Edition, 1881, p. 393.

℞	Orpiment, ...	ʒss.
	Calcis viv., ...	℥ss.
	Farinæ tritici, ...	℈ij.

—*M.*

Whichever of these powders is used is mixed with a sufficiency of water to form a paste, which is smeared thickly over the affected part. It is left on for a few minutes (as short a time as necessary, consistent with effecting our object, so as to irritate the skin as little as possible), then scraped off with a spatula or blunt knife, and the surface is washed and dried. A little soothing ointment may then be applied (*e.g.*, pure carbonate of zinc, ʒss; cold cream, ℥i), and a little dusting powder to fill up the orifices of the follicles.*

In deciding which of the above methods of local treatment is to be adopted, we may take into consideration the wishes of the patient after explaining their rationalé. For fine downy hairs (lanugo growth) the best treatment is the application of an ointment containing about 1 per cent. of a 3 per cent. solution of peroxide of hydrogen, which tends to make them pale and indistinct.

2. DEFECTIVE GROWTH OF THE HAIR.

Alopecia

(derived from αλωπηξ = a fox, because, when that animal is affected with the mange, the hair falls out in places) may be either congenital or acquired.

Congenital Alopecia (*Alopecia adnata*).

It is not an uncommon thing for children to be born with very little hair, or even without any at all, but then usually in early life it begins to grow; in rare cases, however, it never makes its appearance, and then the teeth sometimes are wanting as well, or are

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* ℞	Pulv. zinci oxidi,	
	,, lycopodii,	
	,, amyli, āā, ...	℥ss.
	Olei rosæ, ...	♏i.

—*M.*

developed at an unusually late period. That this condition may be hereditary is proved by the occurrence of cases in which several members of a family have been affected. A similar deformity has also been observed in the lower animals, "especially in a certain species of horse found in Little Thibet, on whose hide not a trace of a hair, or a hair follicle can be discovered; the same occurs in a race of African dogs; also hogs of that country" (Neumann).

Acquired Alopecia (*Alopecia acquisita*).

This is much more commonly observed, and may be classed under one or other of the three following divisions:—

a. Alopecia senilis. *b.* Alopecia simplex. *c.* Alopecia areata.

a. Alopecia senilis.

This is due apparently to defect of nutrition and atrophy of the hair follicles, in common with the other structures of the skin, and can only be regarded in the light of an abnormality when it occurs in early adult life (alopecia præmatura, a. præsenilis), in which case it is frequently hereditary. It is much commoner in males than in females, and this is supposed to be partly due to the pressure of the edge of the hat on the sides of the head, thus interfering with the circulation. It may be distinguished from other forms of alopecia from the facts that it usually commences upon the crown and upon each side of the brow, from which, as centres, it gradually spreads (but the back of the head may escape altogether, as well as the beard, which, indeed, is often remarkable for its luxuriant growth), and that it is often preceded by greyness of the hair.

b. Alopecia simplex (*Alopecia idiopathica, Defluvium capillorum*).

By this term is meant a thinning of the hair, which comes away in great abundance on combing, causing often partial baldness, which, however, is usually temporary. It is unaccompanied by eruption of any kind. The hairs themselves appear to be healthy; but the hair bulbs are more or less atrophied, owing, no doubt, to defective nutrition of the hair follicles, seeing that it generally occurs in connection with debility and a lowered tone of the nervous system; and the most typical cases are met with after serious illness, such as an attack of typhoid fever.

It is a common affection (in its minor forms, with regard to which we are not often consulted, exceedingly so), inasmuch as it was met with 89 times among 12,000 consecutive cases of skin disease, 33 times among 2,000 private, and 56 times among 10,000 hospital cases. The term alopecia is used in this classification, as it should always be, in a very restricted sense. Thus, when the scalp is attacked by erythema or seborrhœa, the hair often comes away in great abundance; but here the alopecia is merely one of the symptoms of these affections (pityriasis, as they are often termed). When the poison of syphilis enters the system, the hair frequently falls out; but this is only one of the manifestations of syphilis. When lupus attacks the head, it destroys the hair follicles and leads to permanent baldness; but then the alopecia is but one of the consequences of the strumous disease. Such cases are classed under the respective heads of erythema, seborrhœa, syphilis, and lupus. Errors in **diagnosis** may generally be avoided if it is borne in mind that the true alopecia simplex is neither preceded nor accompanied by eruption or desquamation, nor followed by cicatrisation or depression of the scalp; but we must be on our guard against the possibility of the case being one of syphilitic alopecia, because, as far as the examination of the hair and of the scalp is concerned, it may be impossible to distinguish it from simple alopecia. We may, however, have a shrewd suspicion that it is the former we have to deal with, if we obtain a history of recent infection of the system, and if other and characteristic manifestations of syphilis are discovered.

The **treatment** of alopecia simplex must be both constitutional and local. Not unfrequently dyspepsia is at the root of it, which must, therefore, be treated in the same way as we would treat the same disorders of digestion when they occur unaccompanied by loss of hair. If, as sometimes happens, it is associated with chlorosis, our sheet-anchor is iron, and there is no better preparation than Blaud's pills,* especially in the form of bipalatinoids.

Sometimes the internal administration of tar is of service,† but, bearing in mind what has been said with regard to the etiology of this condition, cod-liver oil and tonics, especially nerve tonics, as strychnia, phosphorus, and, above all, arsenic, are usually indicated.

* ℞ Ferri sulphatis,
Potassæ carbonatis,
Potassæ tartratis, āā, ʒss.
Tragacanth, q.s. —*M.*

Divide in pil. XLVIII. Argent.

Sig., Six daily. Begin with a smaller quantity.—These pills are so large that it is better to divide them into 96, in which case 12 should be taken daily.

† R Picis liquidæ opt., ... ʒi.
Spt. rectificati., ... ℥i. —*M.*

Sig., ℥ss thrice daily in treacle or golden syrup. Begin with a dose of two or three minims, as tar does not agree with every one.

In many cases the best results are obtained by warm baths every night, or every second night, followed by a hot drink and a pill of pilocarpine (gr. $\frac{1}{6}$ to gr. $\frac{1}{3}$) sufficient to produce free perspiration.

The *local treatment* resolves itself into the use of remedies calculated to stimulate the functional activity of the hair follicles, and their name is legion. A few illustrations of the kind of remedies which may be of use, will suffice. But, before prescribing any remedy, the patient must be warned that the first effect of the treatment is to cause an increased fall of hair, as the result of the friction, and that he must not be disappointed when it occurs, as our object is, not to save the already loosened hair, but to cause the new hair to grow healthily. Whatever other local treatment is resorted to, it is generally serviceable to have the head frequently washed with soft soap, or a solution of soft soap in rectified spirits, to dry it with a rough towel, and then to brush it firmly until slight redness of the scalp is induced. In addition, lotions or ointments containing perchloride of mercury,[*] sulphur,[†] and, above all, tar,[‡] in some form or another, are to be recommended. Another remedy which sometimes proves of service is chrysophanic acid,[§] and an old and well-tried remedy is cantharides.[‖] Sir Erasmus Wilson recommends the use of

[*] ℞ Hydrargyri perchloridi, ...	grs. xii.	
Glycerini, ...	ʒvi.	
Spt. rectificati., ...	℥iij.	
Aq. destil., ad	℥vi.	
Olei rosæ, ...	♏i.	
		—*Solve.*

[†] ℞ Sulphuris hypochloridi, ...	ʒij.	
Solutionis picis (Guyot), ...	ʒiss.	
Glycerini, ...	ʒi.	
Lanolini purissimi (Liebreich), . . .	ʒv.	—*Misce.*

Sig., Apply firmly to the scalp night and morning.

[‡] ℞ Liq. carbonis detergentis, ...	℥i.	
Glycerini (Price), ...	ʒvi.	
Aquæ destillatæ, ...	℥iv.	—*Misce.*

Sig., Sponge the scalp night and morning.

[§] ℞ Acidi chrysophanici, ...	grs. x.	
Glycerini (Price), ...	♏xl.	
Unguenti petrolei, ...	ʒvij.	—*Misce.*

Sig., Apply to the scalp night and morning. The patient must be warned that this ointment stains indelibly everything that comes in contact with it, and that it sometimes inflames the skin, in which case it must be temporarily omitted.

[‖] ℞ Pulveris cantharidis, ...	ʒi.	
Glycerini (Price), ...	ʒi.	
Unguenti simplicis, ...	ʒvi.	—*Misce.*

Sig., Apply firmly to the scalp night and morning.

a lotion containing strong liquor ammoniæ,[*] and Dr. H. D. Bulkley[†] and the late Dr. Tilbury Fox[‡] the prescriptions which are appended.

The **treatment** of alopecia senilis does not yield such satisfactory results as that of alopecia simplex, for, while in the latter a satisfactory and permanent cure may usually be anticipated, the most that we can expect in the former is to stem the progress of the loss of hair, to which end nerve tonics and stimulating applications, such as we have just mentioned, are to be recommended.

c. Alopecia areata.

Syn.—*Tinea decalvans* — *Porrigo decalvans* (Bateman) — *Alopecia circumscripta* — *Pelade* — *Phyto-alopecia* (Gruby) — *Ophiasis* — *Teigne décalvante* (Devergie)—*Teigne achromateuse*—*Area* (Celsus)—*Vitiligo capitis* (Cazenave).

Alopecia areata is one of the most interesting of the affections of the skin, and one with regard to the nature of which there is much difference of opinion. A disease confined to those parts which are provided with hairs, it attacks the scalp principally; but the beard, the genital organs, and other hairy parts are also exposed to its ravages. Although not in any way dangerous to life, it is yet rather an alarming disease, from the deformity which it may occasion, sometimes continuing to flourish till every particle of hair on the body is destroyed. It is by no means unfrequently met with—not that it is such a very common disease—but that patients suffering from it are pretty sure to seek advice. This is shown from the statistics of 12,000 consecutive cases of skin disease, amongst which were 246 of alopecia areata, 93 among 2,000 private, and 153 among 10,000 hospital cases.

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[*]

℞ Olei amygdalæ dulcis,	℥i.
Liquoris ammoniæ fortioris,	ʒi.
Spiritûs rosmarini,	℥iv.
Aquæ mellis,	℥ij.

Misce, fiat lotio.

[†]

℞ Tinct. cantharidis,	
Tinct. capsici, āā,	℥ss.
Olei ricini,	ʒi.
Aq. colognien:	℥ij.

M. Ft. liniment.

(*Handbook of Skin Diseases*, by Dr. Isidor Neumann, translated by L. D. Bulkley, M.D. New York, Appleton & Co., 1872. P. 327).

[‡]

℞ Tinct. nucis vomicæ,	℥ss.
Tinct. cantharidis,	ʒvi.
Glycerini,	ʒij.
Aceti destillati,	℥ss.
Aq. rosæ, ad	℥vi.

M. Ft. lot. (*Practitioner*, March, 1870).

It consists essentially of the formation of round patches of baldness, sometimes solitary, but more generally multiple, which seem to have a special tendency to attack the back and the sides of the head above the ears. It is said that, at the commencement, the skin of the affected parts is slightly reddened and swelled, and occasionally itchy, but, if so, this first stage is of short duration, and is generally not noticed by the patient until the loosened hairs fall out, leaving a round bald patch. The surface then is remarkable for its whiteness, having apparently lost every particle of its pigment, but it seems probable that the whiteness is not only owing to defective pigmentation in the mucous layer of the epidermis, but also to the loss of the roots of the hairs. If the disease is still advancing, it will be found that the hairs at the edges of the patches are very loose, and can be removed with the utmost facility. After the hair has fallen out it is often replaced, at parts at least, by a fine white down, resembling the down on the cheeks of infants, and here and there a little stump is seen, which is dark, with a narrow neck towards the skin, and thickened towards its free extremity. By-and-by even this disappears, and the rounded patch is pale, smooth, and polished like a billiard-ball. The affection is often very limited, only one small patch being detected on the scalp; but more frequently there are several, and these, at first small, have a great tendency to increase and involve the neighbouring healthy parts by circumferential extension, so that at last a number coalesce, forming patches, having a serpentine form; hence the name ophiasis, sometimes applied to the affection. In extreme cases, the disease may continue spreading until the whole of the hair of the head has disappeared: not only so, but I have met with a good many cases in which the eyebrows, eyelashes, beard, and genital organs have been attacked, so that not a single hair has been left upon the body. Sometimes the nails also fall off. In all these cases of universal alopecia the disease commenced in the shape of circular patches of baldness, but in none of them could that implication of the system and arrest of development, to which Hardy has alluded in his work on skin diseases, be detected.

The alopecia may continue for months or years, or may even be permanent, but on the other hand it may slowly disappear spontaneously or under the influence of treatment, and, when improvement begins, the first evidence of it is that the orifices of the follicles become more apparent, giving a dotted appearance to the surface; then fine white silky hairs appear, which by degrees become longer and stronger, and gradually assume their normal colour. The most favourable cases are those which occur in children, which are not very extensive, and which are not of very old standing. But, even in the most unpromising case, a cure may follow steady perseverance in treatment, although months or even years may elapse before this result is obtained. Relapses are far from uncommon.

The **diagnosis** is generally very easy. The patches of circular form, or, if of irregular outline, having edges composed of segments of circles, which are either completely bald, or the seat of downy hairs, or studded with little stumps, are not to be mistaken.

Tinea tonsurans (ringworm of the head) may be mistaken for it, if the former is of old standing, and has led to considerable baldness, but an examination of the hairs with the microscope leads to the discovery of the fungus of ringworm, which is very different from the results of the microscopic examination of the hairs in alopecia areata, as we shall see presently. Often, too, we find cases of ringworm in other children in the family, in which the typical characters of that disease are present, and which a mere tyro can distinguish. (See ringworm.)

Tinea favosa may also be mistaken for it, if the former has been subjected to treatment, and the typical crusts removed; but, apart from the history of the case, an attentive examination of the surface will prevent error; for on the portions of scalp which have been the seat of favus crusts, the integument is reddened and often depressed, and the diseased hairs containing the fungous growth have not necessarily fallen out; whereas in alopecia areata the surface is white, not depressed, is bald, or covered with a little down, or studded with stumps of hairs. If there is still doubt, let the surface be untouched for a couple of weeks, when, if it is a case of favus, the characteristic little sulphur-yellow, cup-shaped crusts will make their appearance.

Lupus erythematodes.—The baldness which results from this affection, when it implicates the head, may resemble that of alopecia areata, but an inquiry into the history of the case, the frequent dusky redness at the edges, and the usual co-existence of the eruption upon the face or ears in the former affection, should prevent error; there is besides an absence of down or of stumps of hair; and, moreover, there is not merely a baldness, but an actual cicatricial and depressed appearance of the surface left by lupus erythematodes.

The loss of hair resulting from various affections of the scalp, such as eczema, psoriasis, and syphilis, requires only to be mentioned and kept in mind, in order to prevent errors of diagnosis.

Ætiology and Nature.—In investigating the causes of this remarkable disease, the first question to be solved is whether or not it is contagious. That it is as contagious as ringworm no one can assert, but there is evidence in favour of its being sometimes so transmitted. Without referring to doubtful cases which have occurred from time to time in my own practice, I content myself with quoting two or three striking cases. Gibert relates the following:—"A little boy, nine years old, affected with porrigo decalvans, was brought to me by his mother. According to her account, the disease only commenced fifteen days before, at a boarding-school, where several of the pupils were successively attacked after exposure to contagion from another boarder who was affected with it, and who had introduced it into the establishment. On the child brought for examination there existed above and a little behind the ear, towards the back part of the left parietal region, a spot the size of a five-shilling piece at most, deprived of hair, and covered with little greyish scales. These little scales, accompanied by a little itching. were only developed consecutively to the alopecia. The first thing which struck the mother was the baldness of that portion of the scalp, as if it had been shaved." *

He also quotes the following case, which was observed by M. Gillette, of Paris:—"Four months ago a pupil, twelve or thirteen years of age, arrived from the country at one of the royal colleges of the capital. The day after his arrival a bald spot, about an inch in diameter, was detected on the side of the head in front of the ear. The physician of the establishment examined it, saw nothing suspicious in it, and thought that he could live with the other pupils with impunity. After fifteen days, the pupil who sat next him was found to have likewise a bald patch of nearly the same size without any premonitory symptom. Since then, six other pupils in the same room have become affected, and always suddenly, but in no case was the patch of baldness more extensive than that mentioned." †

But the most remarkable case is the following, which is related by the late Dr. Hillier ‡:—"In a large parochial school at Hanwell, containing from 1,100 to 1,200 children of both sexes, and from six to fourteen years of age, a number of the children were found all at once to have on their heads patches of baldness, quite smooth and pale. The patches varied in size from that of a fourpenny-piece to an inch or more in diameter. On some children there was but one bald spot; on others two or three. Most of the patches were rounded in outline, but some were more irregular in shape. The number of children affected was forty-three, and they were all girls, from seven to fourteen years of age, who lived together. There was no case of the same kind amongst the infants, or amongst the boys, who occupied a separate part of the building. On more careful inquiry, it was ascertained that one

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* *Traité Pratique des Maladies de la Peau et de la Syphilis.* Par C. M. Gibert, Troisième edition, tome premier, p. 335.

† Quoted by Gibert from *Gazette Médicale de Paris*, vol. vii., 1839, No. 36, p. 574.

‡ The *Lancet*, October 1, 1864, p. 374.

girl had been suffering from this disease of the scalp in an aggravated form for one or two months, and had been allowed freely to associate with the others."

The evidence in favour of the occasional spread of the disease by contagion, coupled with the circular shape of the patches of baldness, naturally leads to a suspicion of the parasitic nature of the disease. Indeed, in 1843, Gruby thought he detected a fungous growth, to which the name of microsporon Audouini was given; and many other observers, *e.g.*, Bazin, Hardy, Tilbury Fox, Hillier, and Hutchinson, adopted the same view. The parasite, according to Bazin, presents these characters:—It consists of spores and filaments, the former being very small and not very numerous, the latter being in great abundance. These are said to be found on the skin, mixed with epithelial scales in the early stage of the disease, and also on the downy hairs at a later period. They are also said to be found in the interior of the hairs, being collected into little bundles, and here and there giving rise to marked dilatations (see Fig. 5). On the other hand, Dr. George Thin * claims to have discovered in and on some of the hairs minute bodies, having the size, shape, and refractive qualities of bacteria. Their size was uniform, and they were frequently in pairs, the long axis of each member of the pair forming a continuous line. Sometimes three of them were found end to end, with an

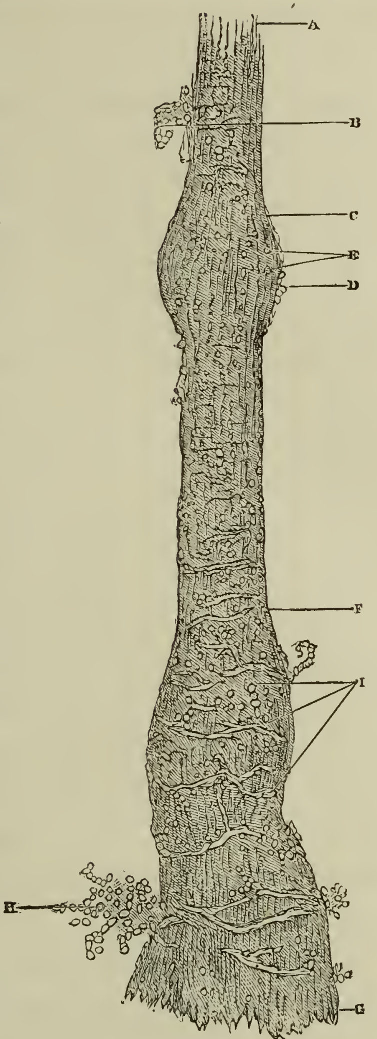

Fig. 5.

A, F, Lower part of the hair; F, G, root of the hair, without capsule; C, spheroidal swelling of the hair, due to the accumulation of spores, E, between the longitudinal fibres of the hair; D, rupture of the longitudinal fibres; I, spores and tubes of the parasite; H, bunch of spores; G, rupture of the root (Bazin).

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* *Brit. Med. Journ.*, Aug. 19, 1882.

appearance of one continuous sheath for the three. He is of opinion that these bodies enter the hair follicle between the internal root sheath and the shaft, and that they penetrate the hair substance near the roots, and ascend upwards in the substance of the hair. The breaking up, loosening, and disappearance of the hair he attributes to the disorganisation of the hair substance by the growth of these bodies. He proposes to apply to them the term bacterium decalvans. More recently Dr. A. R. Robinson's investigations* have led him to the conclusion that the disease is dependent upon the presence of micrococci which specially implicate the lymph passages, and that these organisms produce inflammatory changes in the corium, with frequent fibrinous coagulation in the lymph and blood-vessels.

In the *Transactions of the Pathological Society of London* for 1882, will be found the report of a case by Sir Dyce Duckworth and Dr. Harris, in which the parts were examined after death, and the following is Dr. Harris' report: "Noteworthy points in this examination are the following:—

"1. The distinct atrophy of the hair follicles and of the sebaceous glands in connection with them.

"2. The infiltration of the hair follicles, especially of their outer root-sheath, with a new round-cell growth. This growth appears to be perivascular, and tracts of it are found in the middle layer of the corium leading up to the papillary layer.

"3. The hair follicles in the affected part are mostly quite atrophied, their nourishment having been cut off by the new growth. In some instances, remains of the papilla are seen, but the capillary loops are infiltrated with the cell growth. In other instances the imprisoned follicles appear to be making efforts at repair, by throwing out numerous digitations. Such outgrowths occur in normal hairs in connection with the repair entailed by normal shedding, but here these efforts are in excess.

"4. The glassy layer of the follicles is in some hairs hypertrophied (spindle-shaped or transverse muscular coat of Klein).

"5. The sweat glands are practically unaffected, though parts of their ducts are implicated in the new growth.

"6. No parasitic elements are manifest."

The concluding paragraph of this report is quite in accordance with my own experience; for I have made a great number of microscopic examinations of the hairs and scales, and with every expectation of finding a parasite, seeing that the disease presents all the other characters of a parasitic affection; and yet I am bound to say, that in not a single case have I been able to detect unequivocal traces of a fungous growth. I have observed, however, that the bulbs were atrophied; that the little stumps of hairs frequently met with on and in the vicinity of the bald patches often presented dilatations, as alluded to by Bazin, but without any local cause to account for them; and that, at their broken extremities, the fibres projected in a ragged manner like the broken ends of a piece of wood.

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* *Monatshefte für praktische Dermatologie*, vii. Band, 1888.

My opinion coincides with that of those who hold that it is a neurotic affection, whether regard be had to its etiology, or to the nervous symptoms which not unfrequently accompany it. "Pathologically," says Wilson, "we must regard area as a suspended innervation, as a kind of paresis of innervation; and the other features of the disease follow upon this exhausted state of the nerves of the part; circulation is weakened, nutrition is suspended, and the function of hair-production and secretion is at an end." *

Sir Dyce Duckworth reports the case of a gentleman who was thrown from a dog-cart and sustained an injury to the head, shortly after which all the hair on his body permanently disappeared. In another instance a circular bald patch occurred suddenly on the centre of the occipital region in a gentleman aged 55. He had recently suffered much from mental distress, caused by parting with his eldest son. The hair returned in a few months, but four years afterwards he suffered from partial ageustia. In a third case, a woman, aged about 42, came to him with two bald patches on the left occipital region. The history was that the hair had fallen out in about a fortnight, and that there had been, and still was, severe occipital neuralgia on the left side. A paroxysm had occurred one night, and the next day the hair began to fall. It further transpired that a similar attack had befallen this woman two years previously, and the hair had fallen from the same region. On both occasions, with the disappearance of the neuralgia, the hair returned.†

In the *Lancet* for July 10, 1869, Staff-Surgeon R. Cooper Todd reported a case of universal alopecia following upon a cerebral injury, and, in a letter which he was kind enough subsequently to address to me, he informed me that both smelling and taste were in a slight degree impaired. I have myself met with several cases in which an injury to the scalp was followed by alopecia areata, and quite a number of cases in which, coincident with the onset of the loss of hair, the patient began to suffer for the first time from headaches. Further support is given to the neurotic view from the circumstance, to which I directed attention in 1879 (*Glasgow Medical Journal*), that there seems to be a connection between alopecia areata and vitiligo—a disease which is now pretty generally admitted to be the result of perversion of innervation of the sympathetic. In illustration of this the following cases may be quoted:—On the 15th October, 1874, a gentleman, aged about 25, rather pale, but otherwise healthy, consulted me on account of an attack of alopecia areata, which presented all the usual features of that disease—round bald patches, some studded with little stumps of hairs, some with downy hairs. The disease had almost entirely removed the eyebrows, and to a considerable extent the eyelashes. It had existed on and off for twelve years; and about five years before I saw him he first noticed white spots and patches on the hands and other parts. On examination, I found that the greater part of the trunk of the body, and, to a large extent, the neck and backs of the hands, were the seat of well-marked vitiligo. I saw this patient again on July 12, 1875, when I found little change, either in the alopecia areata or in the vitiligo, and there was no deterioration of the general health.

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* *On Diseases of the Skin*, by Erasmus Wilson, F.R.S. Ed. vi., p. 722. London: Churchill, 1867.

† *St. Bartholomew's Hospital Reports*, vol. viii.

It may, no doubt, be urged that this case is not conclusive, and that the two affections occurring together in the same person may have been a mere coincidence. But a different complexion is put upon the matter if viewed along with the following:—A girl, aged 10, healthy looking, and born of a sound stock, consulted me on the 30th June, 1870, on account of round and irregular bald patches on the head, the latter being due to the coalescence of neighbouring round ones, and implicating in all about one-half of the head. The case, in fact, presented all the naked eye characters of alopecia areata. She was recommended to regulate the bowels with simple aperients, to take small doses of wine of iron and Fowler's solution, and, after shaving the head, to sponge it night and morning with a lotion of perchloride of mercury (4 grains to the ounce). On 28th July all the bald patches were thickly clothed with hair, which, as is usual in such cases when the hair first reappears, was white owing to the absence of pigment. So far, there was nothing unusual in the symptoms until 23rd December, when the patient again visited me. The hair was then perfectly healthy, but, to my surprise, as white at the sites of the previous bald patches as on the 28th of July, the scalp in these situations being also devoid of pigment. She then showed me—what had appeared about a fortnight previous on her shoulders and back—round and oval white spots, from the size of a crown-piece downwards, the skin at the edges being deeply pigmented. In fact, she now presented all the characteristic appearances of vitiligo.

On February 24, 1887, a boy, aged 8, was admitted into the Western Infirmary complaining of discoloration of the hair, and of the piebald appearance of his skin. He had always been healthy, but of such an exceedingly excitable and nervous temperament that, if anything happened to annoy him during the day, his mother had to hold him in bed at night. Twelve months before admission a small bald patch appeared on the vertex of the head, which gradually spread circularly, until a large area was involved. Other bald patches soon appeared which coalesced. Coincidently with the alopecia his mother noticed little white patches on the skin about the shoulders, which rapidly enlarged and coalesced, and which were surrounded by deeply pigmented skin. About a month after the falling out of the hair it recommenced to grow, but, instead of resuming its natural colour, it remained white.

The neurotic theory is further supported by the experiments of Max Joseph on cats (*Centralblatt Med. Wissen.*, 1886, xxiv., 11, and *Monatshefte f. prakt. Derm.*, 11, 1886). After destroying both roots and the ganglion of the second cervical nerve, the hair began to thin at isolated spots in the region of its distribution. These gradually increased to about the size of a shilling, and became quite bald. No other symptom except slight loss of sensation was observed.

Treatment.—After careful attention to the state of the general health, and to the removal of any digestive or other palpable derangement of the system which may be present, the *constitutional treatment* resolves itself into the use of such remedies as cod-liver oil and tonics (*e.g.*, quinine, strychnia, phosphorus, and, above all, arsenic), which generally require to be given for a lengthened period of time. In some cases the internal administration of tar (see p. 45) or carbolic acid [*] is of service, and in chlorotic subjects iron is of course indicated. The production of free perspiration with the aid of a pill of pilocarpine (gr. $\frac{1}{6}$ to $\frac{1}{2}$) every second night, is also to be recommended.

The *local treatment* consists in the employment of stimulating applications, the selection of which must depend on the surroundings of each case. It will generally be found that the hairs at the edges of the bald patches are more or less loosened, and these should therefore be pulled out with the fingers, and any stumps which may be seen on the bald parts themselves removed with epilating forceps. If the baldness is very localised, repeated blistering is specially to be recommended, to which end the patches and their edges may be painted about

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[*] ℞	Acidi carbolici crystal, ...	ʒiij.
	Glycerini (Price), ...	℥i.
	Aquæ destil., ...	℥v. —*Solve.*

Sig., A measured teaspoonful in a large glass of water three times a day before food. The morning dose may be omitted if it produces giddiness. Dose for an adult.

once a fortnight with Smith's "emplastrum cantharidinis liquidum." Even if the loss of hair is somewhat extensive, vesication may still be resorted to, only a portion of the surface, however, being attacked at one time; or, instead, cantharides ointment may be applied night and morning, the strength of which may be increased from 1 to 2 drachms in the ounce, if the skin is not very sensitive. Ointments containing mercurial and tarry preparations,[*] chrysophanic acid (see treatment of psoriasis), and sulphur,[†] and lotions containing perchloride of mercury (see p. 26) are often of service.

Sir Dyce Duckworth, in an excellent paper "On the Nature and Treatment of Porrigo Decalvans,"[‡] speaks strongly in favour of the use of spirit of turpentine, as recommended by Professor von Erlach, of Berne, which may be well rubbed in twice a day with a piece of sponge; and of strong liquor ammoniæ. His attention was first directed to the latter by Dr. Birbeck Nevins, of Liverpool, who wrote to him as follows:—"You may possibly think it worth while to try an empirical treatment that has been followed by success that would seem even incredible to me if I had not seen it. But the cases are only two, and I remember the difference between post and propter. The cases were the most complete baldness in strong, healthy boys, 10 and 12 or thereabouts; not another symptom of disease, local or constitutional.

"The whole scalp was rubbed with a small flannel mop soaked with strong solution of ammonia—so strong that neither the eyes nor the nose of the operator could bear it. The scalp appeared insensible to it—no pain, no inflammatory redness occurred. This was repeated daily until the scalp became sensitive, and the strength was reduced. By degrees, in a few weeks, down appeared (the scalp could not bear any approach now to the strong solution), and in about six months the head was fairly covered by a sufficiently vigorous hair to allow the boys to dispense with wigs, which they had previously worn." The conclusions with regard to these two remedies, to which Sir Dyce Duckworth's experience have led him, are as follows:—

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[*] ℞

Hydrargyri subchloridi,	℈i.
Hydrargyri ammoniati,	ʒi.
Liquoris carbonis detergentis,	ʒiss.
Vaselini,	
Lanolini purissimi (Liebreich), āā,	ʒijss.
	—*Misce.*

[†] ℞

Sulphuris sublimati,	℥ss.
Glycerini (Price),	ʒiv.
Ungti. simplicis,	℥iij.
	—*Misce.*

[‡] *St. Bartholomew's Hospital Reports*, vol. ix.

1. That the local treatment by strong solution of ammonia is apparently more satisfactory than that by spirit of turpentine.
2. That the renewal of hair-forming function is probably hastened more by ammonia than by any other local application.
3. That turpentine appears to be only second in importance as a topical agent.
4. That the ammonia treatment is, on the whole, less universally applicable in these cases than turpentine.
5. That in certain cases—a decided minority—the ammonia treatment cannot be borne because of its severity—*e.g.*, exciting vesication. Turpentine never produces these effects, and is a less formidable agent in all respects.
6. That ammonia may, therefore, be regarded as a valuable local application in these cases.

Another method of local treatment which is sometimes of service is cutaneous faradisation with wire brushes. In order that the current may only act upon the skin, the brushes must be perfectly dry, and for the same reason it is well to dust the scalp with some dusting powder. The brushes are then moved very slowly over the affected surface until the skin is decidedly reddened, the strength of the current being sufficient to produce what may be called pleasant pain. The operation may be repeated daily or even twice a day.

If the baldness is very extensive, and the disfigurement great, it is advisable to shave the head from time to time; and it is often a good thing, before using any of the above remedies, to wash the surface thoroughly with potash soap, and to dry it with a rough towel. Finally, in the use of local applications, it must be remembered that our aim is to stimulate, but not to inflame the skin, and, if the parts are unduly irritated, the treatment must be omitted until the irritation has subsided.

(*b*.) Abnormalities in the Growth, Texture, or Colour of the Hair.

Under this head six affections may be described.

There are two conditions of the hair to which the term "trichorexis nodosa" has been applied; both apparently result from some indeterminate perversion of nutrition, and are probably closely allied pathologically, although I confess that I have never met with the two abnormalities combined.

1. One of these has been most carefully described by Sir Erasmus Wilson under the name of "fragilitas crinium," a name which so accurately describes the condition that it is desirable to retain it although that by which it generally is known is "trichorexis nodosa."

The latter appellation is, however, inappropriate, for there is only an apparent, and not a real, nodosity of the hairs. In fragilitas crinium (Fig. 6) the hair, which apparently is otherwise normal, is dotted here and there with little whitish-looking spots. On microscopic examination these are found to be partial fractures, each having very much the appearance which would be presented by a couple of minute brushes stuck into one another. The friability of the hair is further demonstrated by the circumstance that, after it grows a certain length, it is very apt to break at one of these points, leaving a ragged, brush-like end. Any part may be attacked, but the hair of the face is much more frequently involved than that of the head. The condition must be due to some obscure deviation from a state of perfect health, leading to defective nutrition of the papilla of the hair, interfering with its growth and making it brittle.

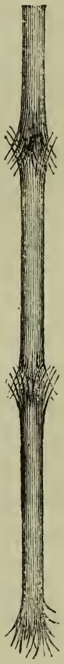

Fig. 6.
Diagrammatic.

2. To the other morbid condition (moniliform or beaded hair) the term *trichorexis nodosa* should in my opinion be restricted, for in it the hairs are really nodose as well as brittle. At all events, it is in this sense that the name is used in the present section. In the cases which have come under my observation the greater portion, but not the whole, of the head was implicated. The parts were not bald, but the hair was very thin and short, of a dark colour, and crisp to the touch, and the scalp had a coarse, scurfy-looking appearance, but there was no irritation. The hairs broke off at variable distances from the surface, and they were twisted and bent at acute angles. On examining them with the naked eye they are seen to be studded at regular intervals with little glistening dots, almost like beads on a necklace, and they are very apt to break across at one of the internodes. On microscopic examination (Fig. 7), the dots are found to be little fusiform nodose swellings, the average diameter of which is $\frac{1}{200}$ in., while that of the constrictions is $\frac{1}{500}$ in. Good examples of this abnormality were described and shown by Dr. Walter G. Smith, of Dublin, at the Cork meeting of the British Medical Association in 1879. "It represents," he says, "a curious freak of perverted nutrition, there being, so to speak, a regular succession of periods of growth and of atrophy, or a periodic alternation of activity and sluggishness." *

The nodes are for the most part opaque, as the result of pigmentary deposit, and are darker than the internodes, while in fragilitas crinium the apparent nodes have a white appearance. When the hairs break in the former it is at one of the internodes, and the broken extremity is sharply pointed, while in the latter it tends to do so at the seat of a partial fracture (apparent node), and the extremity is expanded and brush-like. The one affection is met with almost exclusively on the head, while the other is generally observed on the beard or moustache, although the head may be affected as well. Both abnormalities are rare, more especially the former, which, as far as I can ascertain, has

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* *Brit. Med. Journ.*, p. 656, May 1, 1880.

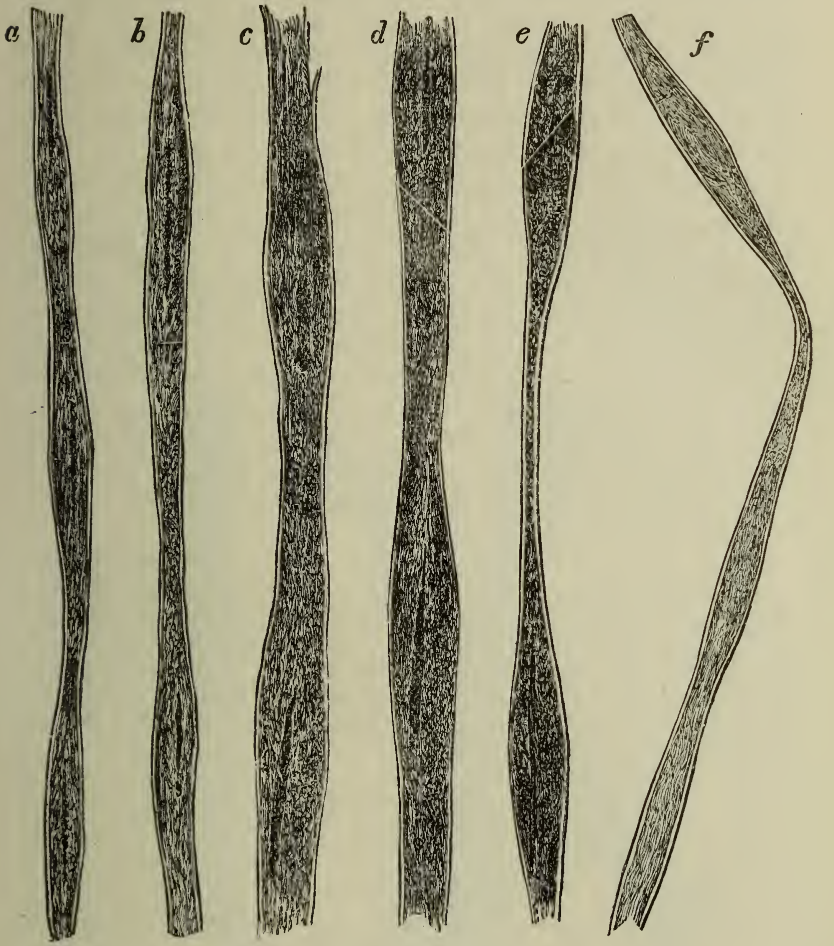


Fig. 7.

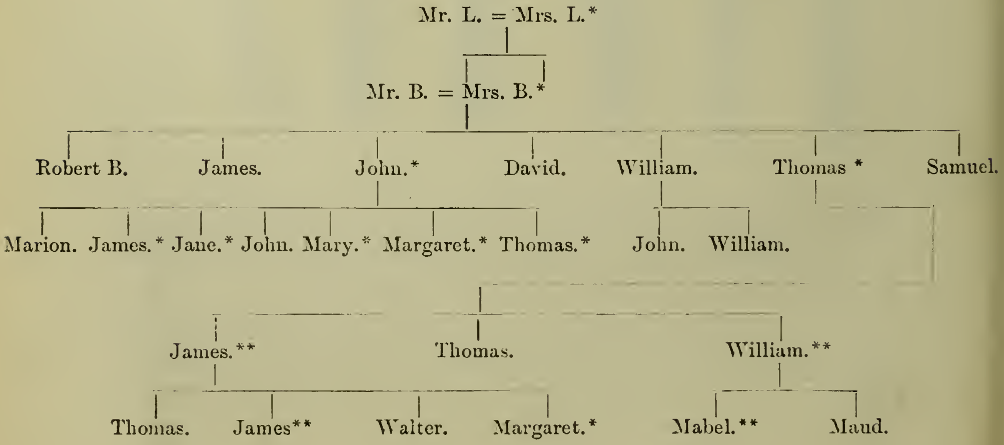
Hair extracted from the heads of—(*a*) Mr. Jas. B., sen.; (*b*) Maggie, daughter of Jas. B., sen., aged 18 months; (*c*) James, son of Jas. B., sen., at the age of 3½ years; (*d*) ditto, at the age of 4⅓ years; (*e*) Mr. Wm. B., brother of Jas. B., sen.; (*f*) Mabel B., daughter of Wm. B. (see next page).

only been described by Dr. W. G. Smith and Dr. Liveing, and certainly no case has hitherto been recorded illustrative of its hereditary nature. In this affection, stimulating lotions and ointments, and arsenic internally, are indicated (see treatment of alopecia simplex).

In the spring of last year Mr. James B——, senior, a farmer from the South of Scotland, consulted me with regard to his son James, aged three years and a half, on account of defective growth of the hair, implicating the greater part of the head, a condition which, as in the other members of the connection about to be referred to, was congenital, or nearly so. The disease presented all the characters of the second variety of trichorexis nodosa just described, and the father himself was similarly affected. He informed me at the same time that his daughter Maggie had the same disease, and on sending me some of her hair, I found that it likewise exhibited the same nodose condition. Some time after this Mr. William B——, brother of James B——, senior, brought to me his daughter Mabel, and on examining them I found that both father and daughter were affected in the same manner (see Fig. 7). On inquiry I was informed that many other members of the connection were in like manner affected, and, at my request, the first-named patient sent me the annexed family-tree, along with the following letter:—

"*May* 19*th*, 1881.

"DEAR SIR,—I have now the pleasure of sending you samples of hair, as requested. I have traced the disease back to my great-grandmother, Mrs. L——, and believe that her family (M'K.'s) were also similarly affected. I send herewith a sketch of a family-tree, showing the members of each family who had weak hair; they are marked thus *. Those whom you have seen are marked **. Those who had weak hair were almost invariably dark. Those who have good hair are fair or of reddish complexion."



This gentleman visited me again on December 25th, 1888. Since his previous visit his wife had borne him six children. The two last, a girl and a boy, were affected. The girl, who accompanied him, was typically affected, the crown alone escaping. He told me also that his brother William had five more children, none of whom had suffered.

This case is so remarkable as an illustration of hereditary transmission of a very rare defect as to appear to me well worthy of being put upon record.

3. LEPOTHRIX.

Trichomycosis nodosa (Patteson), *Mycosis axillaris* (Payne).

Some time ago I received a letter from an old student of mine in which he says,—"A young lady asked my advice a few days ago about the condition of the hairs in her axilla, a sample of which I enclose (see Fig. 8). Some of them had much the appearance of being the result of the pediculus pubis, but others seemed to be much too irregular for that. The hair of the head is quite healthy." This affection of the hair, which is only met with in those of the axilla and

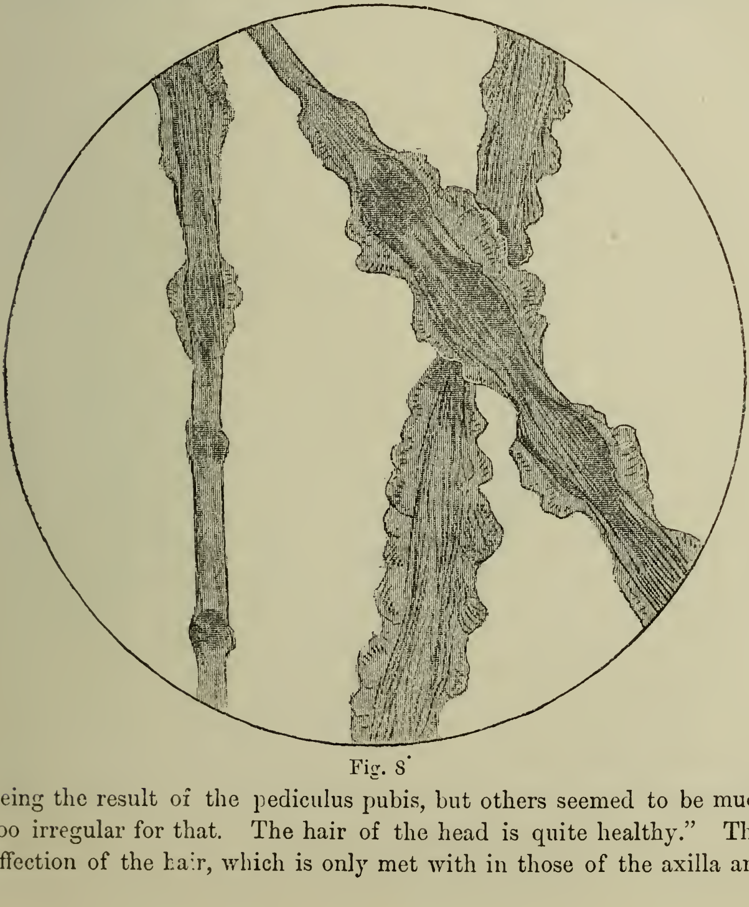


Fig. 8

scrotum—presumably on account of the heat and moisture of these parts—was first described by Paxton in 1869,* and later by Sir Erasmus Wilson,† who gave to it the name of lepothrix (λεπίς, a scale; and θρίξ, hair). Quite recently it has been carefully investigated by Mr. R. Glasgow Patteson, M.B.,‡ who came to the conclusion that it is of bacterial origin, and from whose description I quote freely. The diseased hair is dry, dull, and lustreless, and has—most frequently about the middle third of the shaft—a rough and knotted appearance and feeling. This is due to the presence of very minute concretions which are firmly adherent to the hair, and which may assume either a diffuse or a nodular form, or a combination of both. The former may implicate the whole length of the hair, never extending, however, into the hair follicle, while the latter forms small roundish masses separated by intervals of healthy hair. A fracture occasionally occurs at one of the nodes, when a brush-like extremity is left, but the hairs are not very brittle, and, as a rule, taper to fine points beyond the limit of the disease. Patteson has found bacilli in these concretions in the shape of "short fine rods with slightly rounded ends, about two to three times as long as broad, and about one-fourth the diameter of a red blood corpuscle. They stain readily with any of the aniline dyes, but are best seen when stained by Gram's method." "The maceration caused by the moisture and warmth of the parts . . . loosens the epidermal scales, and allows an entrance to be thus effected by the bacilli into the parts beneath. . . . The bacilli burrow into the hair, lying at first in small pits or depressions on its surface, and as they develop, the pressure of their growth causes a longitudinal splitting of the cortical fibres which finally leads to their rupture and the curling up of the separated ends. At the same time takes place the formation of the hard, homogeneous, or slightly granular substance which lies between and around the bacteria, as it were encapsuling them, and forming the surface projections or nodes. Into these masses the curled ends of the ruptured fibres can, in unstained specimens, be seen projecting. This also serves as a splint, supporting the shaft at these weakened points, and thus explaining the slight tendency there is to fracture of the hair. The material which is thus thrown out is exactly similar in appearance to that with which pediculi fasten their ova to the hairs."

A description of the same or a very similar condition, founded on two cases, was given under the name of mycosis axillaris, in *St. Thomas's Hospital Reports*, vol. xvi., p. 268, in the Report of the Department for Diseases of the skin, 1886, by Dr. J. F. Payne. He

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[*] *Journal of Cutaneous Medicine*, vol. iii., p. 133.

[†] *Lectures on Dermatology*, 1878. [‡] *Brit. Med. Journ.*, May 25, 1889, p. 1166.

“there described the round masses or lumps often observed on the shafts of the axillary hairs, as being the zooglœa form of a species of bacterium, which might be called an oval micrococcus or a short form of bacillus. The same object would seem to have been observed by Waldeyer, Behrend, and others; while the micrococcus of red sweat described by Babes has much resemblance to it except in colour. Similar observations have probably been made by others, though it is possible all may not refer to the same species. At all events, the bacterial origin of such masses has been recognised by several observers.”

4. TRICHOPTILOSIS.

(θρίξ, hair, and πτίλωσις, feathering.)

Under this title Devergie described a condition which consists in a longitudinal splitting of the hair into fine filaments, which, being broken into unequal lengths, and becoming laterally arranged, give to the hair the appearance of a feather.* A case of this peculiarity was recently published by Dr. Rushton Parker, of Kendal—who was kind enough to send me specimens of the hairs (Fig. 9)—under the title of “acne mentagra,”† and, as it illustrates very well the main features of the complaint, I give it in his own words.

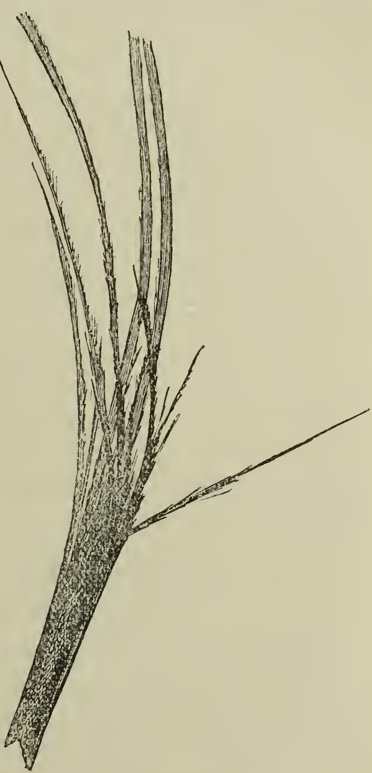

Fig. 9.

“R. B., aged 35, has been ten years under observation, remaining unshaven throughout, though previously shaven. At intervals of a few months, he becomes suddenly aware of a tingling spot, somewhere on the chin, where he always then finds a small tubercle, from which he extracts a number of diseased hairs, thus obtaining immediate relief. These hairs differ from their neighbours in many important points; they are extracted with very great ease, and give relief instead of pain in the process; they are often surrounded by a glutinous cylinder

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* *Annal de Dermatologie et de Syphilig*, 1872.

† *Brit. Med. Journ.*, Dec. 15, 1888, p. 1335.

of rootsheath, and occasionally by a speck of pus outside this; they often have one or two white joint-like spots in their course, at which they very easily break off; the ends are always split up longitudinally into a brush of from two to six segments, which may extend only down to a joint or nearly to the root; the unsplit part is always dull and coarse, and very easily splits artificially. The relief obtained by extraction is evidently greater in those hairs which are the more diseased, and the patient is greatly relieved by completely denuding a patch varying in size from a split pea to a threepenny-piece, which he can accomplish himself solely by the aid of touch. During the next few days the tubercle quite subsides, and for several months recurrence at that particular spot is most certainly warded off, though others in the neighbourhood or at a distance may perchance be similarly attacked. The patient has been free from every skin disease except acne, to which he has been subject since youth, and which he had in a very pronounced and indurated form on the face and back between the ages of 20 and 26. Under vigorous exercise, kept up for several weeks, the acne almost entirely disappears: and, after several months of unusually vigorous exercise, it recently vanished for the first time in his recollection. During these periods the affection of the beard diminishes markedly or vanishes. On the other hand, a sedentary, studious life invariably sets up the acne on the back, with one or two tubercles on some part of the face, and almost invariably a spot or two of this trouble on the beard—the moustache and whiskers having so far escaped."

We know very little with regard to the treatment of lepothrix or of trichoptilosis, although theoretically arsenic, and local stimulants, such as those mentioned under the head of alopecia simplex, are indicated, but, if the bacterial origin of the former is correct, antiparasitic remedies should be used, such as a lotion of perchloride of mercury (two grains to the ounce).

5. TRICHONOSIS VERSICOLOR.

(*Striated, banded, or ringed hair.*)

Cases of this kind, which are exceedingly rare, have been recorded by Wilson * (who gave it the name of trichonosis versicolor) and Karsch; † and I have recently, through the kindness of my friend Dr. Frew of Galston, had the opportunity of examining the hairs from a patient, of whom he gives the following report:—

"J. F., aged nine and a half years, was brought to me on the 7th

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* *On Diseases of the Skin*, 6th Edit., p. 732. London: J. Churchill & Sons.

† Quoted in *Hand-book of Diseases of the Skin.* Edited by H. V. Ziemsson, M.D., p. 435. New-York: Wm. Wood & Co.

March, 1886, for a peculiar appearance of the hair, which her mother had noticed. She had a good head of fair hair, which, when closely examined, had a silvery striated appearance. This was easily observed in the mass, but more difficult on examining individual hairs. The bands of striation were not more than a line in length, and were composed of light silvery looking bands, alternating with darker ones.

"The girl had always been healthy, until about two years ago, when she had an attack of measles, followed by pneumonia. Since then she has had two or three attacks of tonsilitis, and, at present, the tonsils are chronically enlarged. In the month of November, 1885, her mother noticed two small patches of 'ringworm' amongst her hair—one situated behind the right ear, and the other at the back of the neck (another child in the family had had ringworm shortly before). To these patches she applied strong acetic acid on several occasions, which arrested the disease. Nothing further was observed until she was brought to me in March for this peculiar appearance of the hair. No trace of the ringworm was then visible. I ordered the hair to be cut short, and cantharidine pomade was applied to the scalp. The hair is now (June, 1886) growing well, and quite free from striation.

"It is interesting to note that the father of the girl is absolutely hairless. He had a fairly good head of hair up to 1867, when he had typhoid fever. Commencing work, he thinks, too early after the fever, he was seized with very severe pain in the head, which lasted for several days. This was followed by a falling out of the hair on every part of the body. He shaved the head regularly for some years, and applied various remedies, and, although a downy hair grew for some time, latterly it ceased also, and for the last ten or twelve years he has been absolutely hairless. His father died insane."

To the naked eye, or with a low power of the microscope, the hair has a striated appearance, as if studded with minute nodosities at nearly equal intervals. But, with a higher power, it is found that the calibre of the hair is uniform, and that the apparent nodosities are due to little elongated masses in the centre of the hair, separated from one another by nearly equal interspaces. By transmitted light they are black, and might be mistaken for pigment, but they are clearly not pigmentary, and by reflected light they are almost white, while with a high power of the microscope, they are seen to be composed of multitudes of minute spaces of various shapes and sizes, enclosed by dark glistening walls. Is it possible that this appearance is due to interstitial development of gas? Spiess and Landois thus refer to the microscopic examination of the hairs:—"When on the stage of the microscope, penetrating fluids were added to the hair after it had been cut at a white spot, air-bubbles were disengaged, the fluid saturated the hair tissue, and the white patch assumed the same colour as the adjoining brown ones."

The accompanying illustrations (Fig. 10) were kindly drawn for me by the late Dr. John Wilson. This condition is probably due to some obscure and intermittent disorder of the function of the hair pulp. Landois attributes it to "an intermittent irritation of trophic and vaso-motor nerves."* In very rare cases this condition of the hair occurs as a complication of a white, opaque, condition of the nails (canities unguium (S. Giovannini), leukonychia (Unna)), due to the accumulation of air in many cavities, especially in their upper and lower layers. See *International Atlas of Rare Skin Diseases*, vi., 1891, ii., Fig. xix., p. 2.

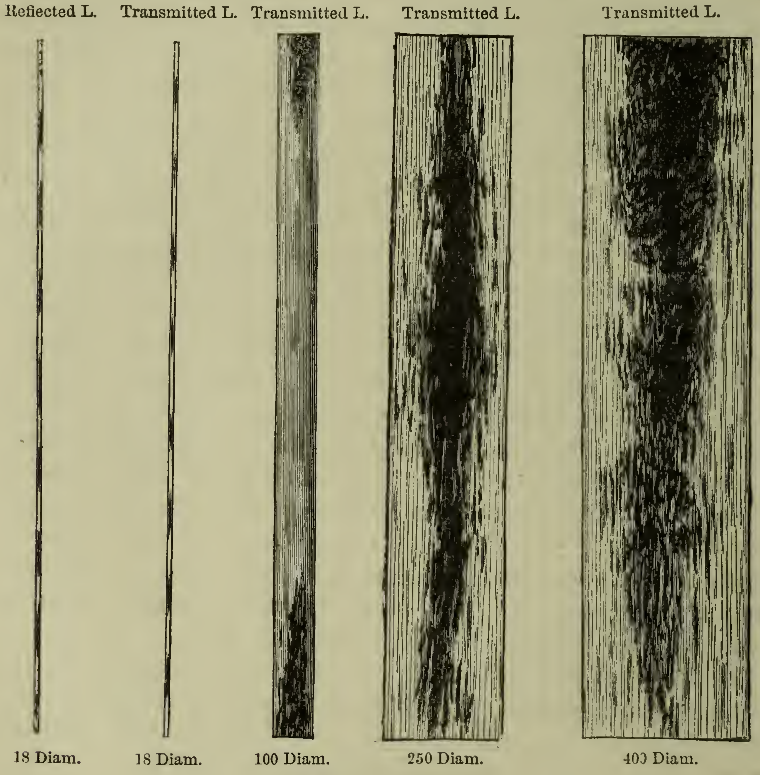

Fig. 10.—Striated Hair. J. W.

6. CANITIES.

(*From canus—hoary.*)

By this term is meant blanching of the hair, owing to absence of hair pigment. Apart from that occurring in advancing years (canities senilis), and which must be regarded as a physiological condition, premature decoloration of the hair is often met with, although rarely before adult life (canities præmatura). Its genesis is altogether unknown to us, except that it is undoubtedly often hereditary. It may affect all the hairs, or some only, at first at least, or occur in tufts or patches, and is often associated with, or followed by, alopecia, which would lead one to suspect that it results from some obscure perversion of the nutrition of the part. It is said sometimes to occur suddenly under the influence of violent emotion, even in a night, and is supposed by Landois to be then due to the sudden appearance of air-bubbles in the interior of the hair, obscuring the pigment. The normal colour is rarely if ever restored, unless when the deformity is secondary to some other disease, such as alopecia areata or vitiligo.

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* *Loc. cit.*, p. 436.

We are not often consulted with regard to this condition unless the case is complicated with alopecia. This is apparent from the circumstance that not a single case occurred amongst 10,000 public, and only four cases amongst 2,000 private cases of skin disease. One of these is specially worthy of note—that of a gentleman in the prime of life, and apparently in good health. The affection was of some years' duration, and implicated the hair of the left upper eyelid, and most of the hair of the left whisker, which was quite white. The affection of the eyelid was complete within a few days from its commencement, the whiteness appearing first at the inner angle of the lid, and rapidly extending outwards. No cause could be assigned by the patient unless anxiety in starting a new business. In some cases the decoloration is hereditary. Thus, I am acquainted with a gentleman who has jet-black hair, with the exception of one lock of grey in the occipital region, who informed me that his father and grandfather presented the same peculiarity.

The **treatment** of canities is not satisfactory. In the premature form—especially if it is not hereditary but accidental—we should pay strict attention to the general health, and arsenic and local stimulants (such as have already been referred to under the head of alopecia simplex) may be tried. Kaposi recommends the use of fatty oils, by means of which "the hair is tinged of a darker colour and a darker gloss"—special favourites being oil of colocynth, oil of mace, oil of walnuts, and oil of cassia. He tells us that Pfaff advises the use of the following pomade :—

℞ Olei overum recens pressi.	
Medullæ ossium bovis, āā, ...	℥i.
Lactatis ferri, ...	ʒss.
Olei cassiæ ætherei, ...	℈i.[*]—*M.*

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[*] "On Diseases of the Skin," by Ferdinand Hebra, M.D., and Moriz Kaposi, M.D. *New Syd. Soc. translation*, vol. iii., p. 193.

The only other method of treatment which can be employed is the use of a hair dye, unless we recommend that nothing at all should be done, which is often the best advice, for many people, if they only knew it, are much handsomer when their hair has turned grey than they ever were before; and as for concealing their grey hairs with the aid of a wig, such a proceeding is monstrous. If people insist upon endeavouring to repair the "ravages of time by the appliances of art," the use of a hair dye is much preferable, provided that it is not a poisonous one. During the treatment of a case of the so-called Burmese ringworm (eczema marginatum), I accidentally discovered a new way of dyeing the hair. After using a lotion of perchloride of mercury (gr. ij to the ℥i) for some weeks, I changed it for one of hyposulphite of soda (ʒi to the ℥i), and the morning after the first application of the latter, the hair of the part which before was bright red, had become nearly black. One or two more applications rendered it jet-black, while neither the skin nor the clothing were stained. I saw this patient a couple of weeks later, and there was not the least deterioration of colour. My patient was by occupation a turkey-red dyer, and was much interested in the discovery, though rather grieved to find, what cosmetically must be considered one of its greatest advantages, that it did not dye the linen, and was therefore unavailable for his purposes. The dye most commonly in use is a solution of nitrate of silver, the strength of which must depend upon the depth of tint desired. This is applied after thorough washing and drying of the hair, which is afterwards exposed to the sunlight. The blackening of the skin in the vicinity may be prevented by sponging it immediately afterwards with a solution of cyanide of potassium, or, what is safer, a solution of common salt. Some advise the application of a solution of sulphuret of potassium immediately after the silver salt, a sulphide of silver resulting. Finally, Dr. Kaposi recommends a vegetable hair dye employed by the Persians, and often used by Dr. Pollak (formerly Court physician to the Shah of Persia) in the clinique of Prof. Hebra. According to Dr. Pollak, we can "produce with it all shades of colour of hair, from a light brown (dark blonde) to a dark (blue) black. The Persians are in the habit, if their hair is not quite black naturally, of tinting it from time to time with this remedy, in order to give it the dark-blue gloss. The remedy consists of the powder of the dried herma plant (one of the papilionaceæ) and of the powdered indigo plant. The first powder is formed into a thick paste by means of water, and spread upon the hair. After the lapse of an hour this appears of a red colour. A paste prepared from the powdered indigo plant is then spread on the first. Under the influence of warmth and moisture, the black colour becomes apparent on the hair covered with these two pastes in the course of several hours. By a proper regulation of the quantities, of the length of time, of the degree of moisture, &c., under which the application of the two pastes is made, and their mutual reaction which results, the different shades of colour may be produced. Much special experience is undoubtedly required to carry out this plan, for we have seen, even in the experienced hands of Dr. Pollak, a colour produced which was some degrees removed from what was desired." * Indeed, whatever dye is employed, the patient should always be advised to try its effect on some covered part in the first instance.

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* "On Diseases of the Skin," by Ferdinand Hebra, M.D., and Moriz Kaposi, M.D. *New Sydenham Soc. translation*, vol. iii., p. 199, 1874.

III. AFFECTIONS OF THE SEBACEOUS GLANDS.

(*a*) Due to Retention of Sebacous Matter.

Under this head three affections fall to be described, viz.—1, Comedones; 2, Milium; 3, Sebaceous Cyst.

1. COMEDONES.

Syn.—*Worms, Grubs.*

These, which are generally met with in young persons, at and after puberty, and in those whose skins are sluggish and inactive, may be found wherever sebaceous follicles exist, but they occur most frequently upon the face, and next to this upon the shoulders, upper part of the front of the chest, and penis. In the first mentioned situation they give rise to much annoyance owing to the disfigurement, which may be considerable, even although they do not produce inflammation (acne). The affected parts are more or less abundantly studded with black, and occasionally slightly elevated spots, about the size of a millet-seed or smaller, situated at the orifices of the sebaceous follicles, which are due to the retention of hardened sebum in the dilated ducts. The surface has thus a punctated appearance as if grains of gunpowder were embedded in the skin. On squeezing out the contents of the follicle a worm-like plug of sebum makes its appearance, which is whitish in colour except at the point which has been exposed to the air and blackened by admixture with particles of dust. Unna, however, is of opinion that the dark head of the comedo is due to ultramarine which exists normally in the cutaneous excretion.

Sometimes the comedo is double—that is to say, two comedones are close together, the narrow portion of skin between them being slightly elevated; and, on using the scoop, two sebum plugs are extruded, one from each orifice, or a long plug from one of them, which is black at each extremity. That the ducts of these follicles are in communication with one another is further proved by the fact that a piece of fine, slightly-curved wire can be introduced at the one orifice and brought out at the other. The probable explanation of the double comedo (as pointed out by Dr. Ohmann-Dumesnil *) is, that the partition between two neighbouring sebaceous glands has been absorbed; hence the double excretory duct. Occasionally three, or even four, neighbouring glands run together, so that three or four comedones are in communication with one another (multiple comedo of Ohmann-Dumesnil).

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* *Monatshefte für praktische Dermatologie*, 1888, No. 2, p. 57.

On microscopic examination of the plug, it is found to be composed of oil globules and epithelial cells; often many minute hairs, too, some of which are apt to be rolled up spirally, are discovered, and frequently the acarus folliculorum. Comedones are often combined with seborrhœa fluida (post), and very frequently they lead to the affection afterwards to be described under the name of acne. This affection cannot be mistaken for any other, indeed its characters are well known even to non-professional persons.

This condition sometimes results from impaired expulsive power, consequent upon imperfect innervation of the arrectores pilorum, or from deficient secretion, so that the *vis a tergo* is insufficient, but the most common cause, in all propability, is the drying and hardening of the sebaceous secretion.

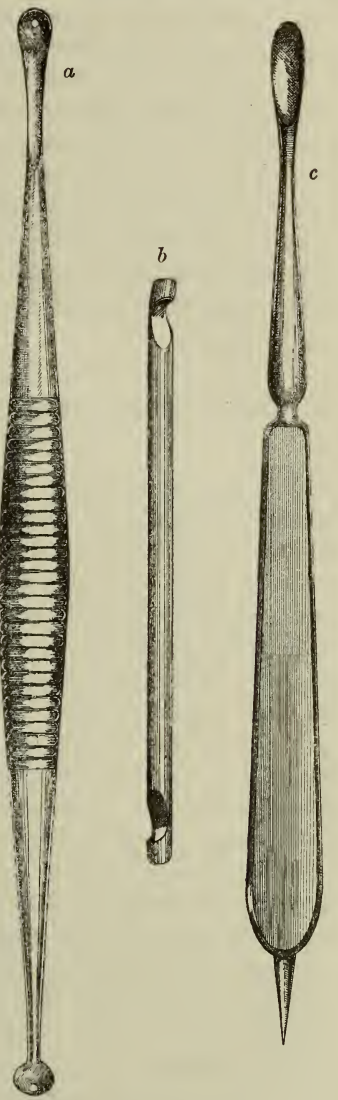

Fig. 11.

Treatment.—When left alone comedones sometimes disappear spontaneously, the accumulations of sebum being gradually extruded from the follicles by an effort of nature; but we cannot count upon this, and, if untouched, they often remain unchanged for years. The indispensable part of the treatment consists in expressing the contents of each follicle, which can be effected by squeezing the comedo between the thumb nails, or by the use of a watch-key, or by means of Bulkley's little silver tube (see Fig. 11, *b*, for modification of), or one of Volkmann's scoops as modified by Ausspitz (see Fig. 11, *c*). The sharp point of the latter is insinuated into the sebaceous follicle, indicated by the black speck at its orifice, by which means its channel is widened, and the attachment of the sebum-plug to its wall loosened. The sebaceous accumulation is then scooped out with the spoon, its edge being pressed downwards near the margin of the follicular opening. After all the comedones have been removed, they often reappear, when, of course, the process must be repeated, but new and recent crops are generally much more easily removed than the original ones, which have often been present for years before we see the patient. As the skin and glandular apparatus must be considered to be in a sluggish state, stimulating lotions and ointments are often of use, such as will be mentioned under the head of acne. Constitutional treatment is of very little value, although, of course, any derangement of the general health must be corrected, and perhaps, in some cases, diaphoretics or arsenic may be of use.

2. MILIUM.

Syn.—*Grutum—Strophulus candidus et albidus, of Willan and Bateman.*

This affection is due to obliteration of the glandular orifices, and consequent retention of sebaceous matter in some of the glands which open into hair follicles, and Bärensprung has seen it at the edges of cicatrices which have obliterated the orifices of the glands. Little, round, slightly elevated, pearly-white spots, about the size of a millet seed or larger, are scattered over the surface in variable numbers. They may occur wherever there are sebaceous follicles, but are principally met with on the face, especially near the eyes and on the eyelids, and on the skin of the genital organs; and it is only when they are numerous that they give rise to deformity, and our advice is sought. On section of the upper wall, the contents of the milium are easily expressed, and are found to consist of sebaceous matter, mingled with epithelial cells, often with crystals of cholestrine, and in rare cases with calcareous matter containing carbonate and phosphate of lime (cutaneous calculi). It will thus be seen that there is no difficulty whatever in the diagnosis. These little bodies are frequently met with on the skin of those suffering from acne and other disorders of the sebaceous glands; but the affection is a purely local one, and has apparently no connection with any disorder of the general health.

Dr. Philippson,* under the name of colloid milium, has drawn attention to a form of disease of which he gives the following summary:—"The nodules are of the size of a pin-head, or a millet seed, or a pea; they are of the colour of the surrounding skin or rather darker, brownish-red or yellowish. In the face they have generally a translucent appearance, which, when more pronounced, makes them look like vesicles. They are hard to the feel and are embedded in the cutis.

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* *Brit. Journ. of Dermatology*, vol. iii., No. 2., February, 1891, p. 35.

"In the face they are localised on the upper parts of the cheek, on the temples, the forehead and the lower eyelids. On the trunk they occupy the anterior aspect of the chest, from the clavicle to the arch of the ribs. On the neck and upper arms nodules were also found.

"Colloid milium is observed in persons of all ages; they cause no subjective symptoms, and therefore often escape observation.

"Anatomically they belong to the class of benign epitheliomata with colloid degeneration, and arise from embryonic epithelial germs in the cutis.

"The diagnosis is based on their transparent or vesicular appearance, by which they are distinguished from ordinary milium with its opaque whitish or yellowish colour. Besides, their localisation on the upper half of the face and on the anterior surface of the chest—as Darier expresses it, in the shape of half a cuirass—seems to be characteristic. In all cases, however, the histological structure is alone decisive evidence of their nature."

The **treatment** is abundantly simple, and consists in puncturing the upper wall of each milium and expressing its contents. If there is a decided tendency to return, the base of each may be moistened with tincture of iodine after removal of the sebaceous matter, as recommended by Piffard, but generally this is unnecessary.

3. SEBACEOUS CYST.

Syn.—*Encysted Tumour—Wen.* By H. C. Cameron, M.D.

This form of tumour consists of a sac or cyst-wall, with certain fluid contents, and is met with just under the skin. The sac, when emptied of its contents, presents usually a smooth internal surface, lined by epithelium, but varies greatly in thickness and strength, being, in some cases, very substantial and tough, while, in others, it is fragile and thin. The contents, which are really sebaceous matters more or less altered, may be almost solid like cheese or lard, or comparatively fluid; and the tumours have been called atheromatous, steatomatous, or meliceritous, according as their contents have seemed to resemble porridge, lard, or honey. In certain instances this sebaceous matter is mixed with fine hairs. In very old, large cysts the contents are sometimes very fluid, and of a dark-brown or greenish hue; while, from degenerative changes, cholesterine crystals as well as epithelial and fatty matters are found mixed with them.

Mode of Origin.—The greater number appear to originate in a morbid condition of the follicular structures of the skin, by which the sebaceous follicles or crypts and their ducts become distended with their own secretion, their orifices being usually obstructed. Indeed, in many cases, it is not hard to discover the little black spot on the surface of the tumour, which marks the situation of the obstructed duct. Through this a probe may be sometimes passed into the interior, or the contents may be forced out in the shape of a fine, worm-like, white thread by firm pressure. Many patients continue to keep such tumours empty and flat by squeezing out their contents periodically; but, in the long run, they are apt to be baffled by the firm and complete closure of the little opening. While it is true, however, that most of these growths are thus of the nature of retention-cysts (like ranulæ and some forms of mammary cyst), there is good reason to believe that a number are really new formations. One form of cyst which contains sebaceous matter, viz., the dermoid cyst, is usually, if not always, of congenital origin.

Situations.—Encysted tumours are met with over almost the entire surface of the body, but are much more common on the scalp than elsewhere. They are of frequent occurrence on the back of the neck and trunk, and especially about the shoulders. They occur also on the face, with less frequency on the front of the neck, thorax, and abdomen, and very rarely on the limbs. I have met with them in such uncommon and widely-differing situations as the flexor aspect of a finger, the lobule of the ear, the vicinity of the anus, the genital organs, and the floor of the mouth.

Clinical Characters and Diagnosis.—They grow but slowly, but may attain to the size of an orange. If uninflamed, I am not aware that pain or any uneasy sensation is occasioned by them. They are much more common in adults than in children, and somewhat more so, perhaps, in women than men. They may be single or multiple, They are often hereditary, and, if a family failing, are apt to be numerous, especially when seated in the scalp. It is not uncommon to meet with as many as ten or twelve on one head, and instances have been recorded where thirty or forty were present. I lately saw, under Prof. M'Call Anderson's care, a woman, whose sebaceous cysts might have been counted by hundreds. They were all of small size, and existed both in the hairy scalp and in the general tegumentary covering of the body. Different tumours vary much in consistence and appearance. Those which occur on the head are hard and elastic, having firm and fibrous cyst-walls. They usually present a white appearance, the scalp covering them having little or no hair. By their growth this soon becomes exposed to view; and, one or more bald tumours being constantly visible, a serious deformity results. In other situations, the tumour is softer and less firm upon pressure, its walls being very thin, while the skin covering it is very like that of the surrounding parts, although at times redder and marked by minute ramifying blood-vessels. Wherever situated, these growths tend at first to increase in size, but, after a time, may apparently remain stationary. Now and then they undergo absorption, especially when by an accidental blow the bag is ruptured and its contents diffused into the subcutaneous cellular tissue. But the most common changes which take place are from inflammatory disturbance: on the head, after growing to a certain size, a wen may inflame, adhere to the scalp, suppurate, and burst. Sometimes in this way the cyst necroses, is thrown off, and a radical cure results. At other times, extensive ulceration takes place over the tumour, the cyst empties to some extent and flattens, and, becoming firmly adherent to both skull and scalp, presents soon the appearance of a formidable, foul cancerous ulcer, with irregular surface and everted edges. Some years ago I saw such a sore on the head of an old woman. It was of large size, occasioned a good deal of suffering, and furnished much discharge. These sores occasionally prove themselves really to be epitheliomata. I lately operated upon a case of large cancerous ulcer of the buttock which originated in a sebaceous cyst. The patient was sixty years of age, and the cyst had existed from early boyhood. It was probably a congenital dermoid cyst. I removed the ulcer, and, on microscopic examination, it was found to be a characteristic epithelioma.

When thin-walled cysts under the skin inflame suddenly, as they often do, much pain and constitutional disturbance are aroused. Bright redness of the surrounding skin, with œdema of the subcutaneous cellular tissue is present, and suppuration soon follows. If opened, the mixture of pus and sebaceous matter which escapes is, in my experience, always excessively foul and stinking; and, I do not doubt that putrefaction has, in such cases, travelled in from the orifice to the central contents of the cyst; the sudden and violent inflammation of the cyst, which may have been quietly *in situ* for years, being a direct consequence of the changes thus brought about in its interior. The wonder, if one reflects on it, is, not that this happens occasionally, but rather that it does not happen oftener.

Dense, fibrous-like horns, which may attain considerable length, are sometimes the result of one of these tumours giving way at one small point. The sebaceous contents, being extruded very slowly in the usual worm-like form, become altered by exposure into a dark-coloured, desiccated, hard, horny excrescence. The same thing may occur through the natural orifice of the duct, without any ulceration. In such a case, what might have taken the form of a wen, had the duct been more completely obstructed, develops into a horn. As time passes these horns slowly increase by additions of sebaceous material at their bases.

There is but little difficulty in the diagnosis of ordinary wens. I have known them mistaken for fatty tumours in such situations as the buttock and neighbourhood of the anus; while the small and but slightly lobulated fatty tumours which occur now and again under the skin of the forehead and temples are apt, in their turn, to be mistaken for wens. I have known a sebaceous cyst in the axilla opened, on the supposition that it was a glandular abscess; but the confusion with abscess can only well take place when the practitioner is consulted in regard to a wen in a state of acute inflammation. The history of the ailment will generally keep him right, and, in any case, the mistake is not a serious one, since the same treatment is required in each case—viz., a free incision.

Dermoid cysts are almost always, if not, indeed, always, congenital. The simplest example of them is met with near the outer angle of the orbit. They are noticed here shortly after birth in most instances, although they may elude for a long time even the observation of a mother. They grow very slowly, and seldom attain a size larger than that of a marble. In order to expose them, the surgeon will find that he has not only to cut through the skin of the upper eyelid, but also through muscular fibres. They have excessively thin, white walls, and, if cut or ruptured, will, on the slightest pressure, empty their contents and collapse. They contain sebaceous matter with numerous fine hairs. If the cyst, after removal, is emptied and slit open, similar hairs can often be seen, with the aid of a pocket-lens, growing from its inner surface. Another seat of this kind of tumour is the sublingual region. Here it often attains considerable size, bulging below the chin, and raising the tongue so as to affect the articulation. It contains sebaceous matter, and sometimes hair, and, although probably always congenital in origin, often does not attract attention until adult life is reached. It is often punctured under the impression that a ranula is being dealt with, and its true character is only recognised on the escape of some of its contents. It is well to remember that, besides these two cystic tumours, fatty tumours occasionally develop under the floor of the mouth. Dermoid cysts are also met with in the thorax, immediately behind the sternum, and in the testicle and ovary. In these two last situations, their contents may be more complicated, teeth and bones being sometimes found in them as well as hair.

Treatment.—Patients seldom desire treatment for a sebaceous cyst until its increase occasions deformity, or its inflammation causes pain and alarm. It is to be remembered, however, that the smaller the growth the smaller will be the wound which is required for its removal, and, as a general rule, it ought to be got rid of while still insignificant. In the scalp, when the cyst wall is tough and dense, it is best treated by transfixing it with a knife (the back of the knife being directed towards the skull, and cutting outwards through the scalp covering it. Some of its contents being shed, the cut edge of the cyst may be seized with forceps, and very little force will serve to detach it entire from its bed. At times, especially in the case of an old and large growth, it will be found more adherent, and require some dissection. If large, it is well to cut out an elliptical portion of the cyst and scalp covering it before dragging out the remainder; and this is especially a convenient procedure when there is close adhesion between the cyst and the scalp. Sometimes one incision will suffice for two or even three small wens growing side by side. If the overlying scalp be ulcerated, the entire ulcer must be removed with the tumour.

A somewhat different mode of extirpation must be adopted with encysted tumours found in other parts than the scalp. Their walls are usually so thin and fragile, and are so fixed in position, that it is impracticable to pull them out entire by means of forceps. They must therefore be cautiously dissected out—care being taken not to rupture or puncture the cyst, else the tumour may empty and collapse. Under these circumstances a portion is apt to be left behind, which may lead to a recurrence of the growth, or at least to the establishment of a permanent fistulous opening in the skin. When one of these thin-walled cysts has inflamed and suppurated, a simple free incision is often sufficient for its cure. The sebaceous matter, more or less mixed with pus, escapes, and the cavity granulates, contracts, and becomes obliterated. At other times the cyst is found to have necrosed, and comes out, whenever the incision is made, as an entire slough. Its removal, if it be adherent, may be satisfactorily effected by a sharp spoon. In conclusion, we ought to remember that operations for the removal of encysted tumours, especially in the scalp, although apparently very trifling, have often proved fatal, generally after the supervention of erysipelas. It is well, therefore, never to make too light of them. The patient to be operated on ought to be in good health, and to be confined to his room for a day or two after the operation. For the little wound good drainage ought to be provided, and all tension and dragging of its edges by tight stitches avoided. A reliable antiseptic dressing ought to be applied after removing the tumour and washing the wound with a solution of carbolic acid, or bichloride of mercury (1 to

2,000). By the free use of solution of carbolic acid (1 to 20), also, the scalp and hair over and around the growth ought to be rendered aseptic before the incision is made. If both tension and putrefaction are by these means avoided, the operator need not fear the advent of any serious inflammatory mischief.

(*b*.) Due to Deficient Secretion of Sebaceous Matter.

This condition is met with in association with many morbid states, such as marasmus and diabetes; it is also apt to occur on the hands during cold weather, especially if they are often washed with hard water, leading to the annoyance popularly denominated "chapped hands," which can generally be prevented by always anointing them freely with Price's glycerine before drying them, which keeps the skin soft and elastic. In ichthyosis, too, there is deficient secretion of sebaceous matter, but hypertrophy of the epidermis is a more prominent feature, so that it is more appropriately classed among the keratoses.

(*c*.) Due to Excessive Secretion of Sebaceous Matter.

SEBORRHŒA

(*Stearrhœa—Acne sebacea*) is the name usually applied to this complaint, which may assume one of two forms.

1. THERE IS TOO ABUNDANT SECRETION OF SEBACEOUS MATTER IN THE FLUID FORM—S. FLUIDA (*S. oleosa*).

This may be observed wherever there are sebaceous glands. It may be general, but more frequently it is localised, and is oftenest observed upon the face, especially upon the nose and brow. The affected skin has a glistening, oily look and feel, and imparts a greasy stain to blotting-paper applied to it, while the orifices of the gland ducts are very patent, and soft, white plugs of sebum can readily be expressed from them. According to Unna this variety of seborrhœa is the result of a morbid condition of the sudoriparous glands. It is a frequent accompaniment of the disease afterwards to be described under the name of acne, and also of the first stage of elephantiasis Græcorum. It is comparatively rarely met with in infants and in old people, but is often observed at puberty and during adult life. When it implicates hairy parts it is very apt to cause matting of the hair, which, when occurring in an aggravated form and neglected, is favourable to the development of a form of that peculiar affection of the hair known in Central Europe under the name of plica Polonica.

2. THERE IS TOO ABUNDANT SECRETION OF SEBACEOUS MATTER IN THE SOLID FORM—S. SICCA.

In this variety the sebaceous matter dries up into crusts of varying size and thickness. At first they are thin, white, and easily detached; but later, if neglected, they assume various shades of yellow, brown, or even black (*S. nigricans*),* become much thicker, and often adhere firmly to the subjacent skin, owing to processes extending downwards into the patent gland ducts. The skin beneath the crusts is healthy or congested, but it is rarely the seat of much itching, and is never infiltrated; the crusts, too, present this peculiarity—that they are not brittle, like ordinary crusts, but can be kneaded into a ball almost like wax.

Nearly the whole of the body may be affected, as may be seen in the case of new-born infants, who are covered with white sebaceous matter (vernix caseosa—smegma); but this is rare as a pathological process, when it is almost always localised, the seats of predilection being those parts where the sebaceous glands are most active in health, such as the head, face, and genitals.

Seborrhœa sicca of the head (*S. capitis*) appears in the shape of polygonal crusts, at first thin and white, afterwards thick and yellow or brownish. It occurs most frequently in infants up to the second year, but is often met with in adults—frequently in connection with menstrual disorder. In adults it is usually less severe than in children, but the head feels hot, and the hair often falls out in great abundance. This is one of the affections to which the term pityriasis capitis is often given.

Seborrhœa of the face (*S. faciei*) is principally met with in very dirty people, but it frequently appears (Hebra) after attacks of variola, when the crust covers the whole face like a mask. Generally, however, it is limited to the alæ nasi, cheeks, or brow, and, when so localised, the skin beneath and at the edges of the crusts is usually reddened and oily. The orifices of the glands, too, are unusually gaping, and plugs of sebum are easily expressed from them.

Seborrhœa of the genital organs (*S. genitalium*).—This occurs between the labiæ in the female, and in the fossa behind the glans penis in the male; in these situations the white sebaceous matter accumulates, and is very apt to undergo decomposition, especially if phymosis is present, or if there is neglect of cleanliness. It then exhales an offensive odour, and sooner or later irritates, excoriates, and inflames the affected parts.

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* An interesting case of this kind is to be found in the *Medico-Chirurgical Transactions*, vol. xxviii., p. 611.

Seborrhœa not unfrequently leads to inflammation of an eczematous character (see eczema seborrhoicum).

The following tables will be found of service in the diagnosis of seborrhœa sicca:—

Seborrhœa sicca.	Chronic Erythema in the scaly stage (Pityriasis).
1. Crusts not brittle; can be kneaded into a ball like wax.	1. Scales brittle; cannot be kneaded into a ball.
2. Crusts consist of sebaceous matter, *i.e.*, of epithelial cells infiltrated with oil globules.	2. Consist almost exclusively of epithelial cells without infiltration with oil.
3. As a rule, little, if any, redness under crusts.	3. Skin beneath scales more or less inflamed and reddened.
4. Itching often absent.	4. Itching usually present.

The same characters help to distinguish seborrhœa sicca from chronic eczema in the scaly stage (eczema squamosum); but, in eczema, in addition, the skin is infiltrated, and generally there is a history of serous exudation upon the surface (leeting), which is never observed in seborrhœa sicca.

Seborrhœa sicca.	Lupus erythematodes.
1. Crusts consist of sebaceous matter, and can be kneaded into a ball.	1. Scales consist chiefly of epithelial cells, and cannot be kneaded into a ball.
2. Skin beneath crusts is oily; but little (if any) redness.	2. Skin beneath scales dry, and dusky red or violet in tint.
3. Never followed by cicatrices.	3. Cicatricial appearance left.
4. Constitution sound.	4. Constitution strumous.

Seborrhœa sicca of genitals.	Soft chancres.
1. History of neglect of cleanliness.	1. History of exposure to infection.
2. Generally surface not ulcerated, only excoriated.	2. Ulcers which have the characters of soft chancres (see syphilitic affections).
3. Secretion not inoculable.	3. Secretion inoculable.
4. No tendency to bubo.	4. Often bubo, which suppurates and yields inoculable pus.
5. Yields readily to cleanliness; separation of parts with lint, and mild astringent lotions.	5. More tedious, and often require the use of strong caustics, &c.

Ætiology.—We are really very ignorant of the causes of seborrhœa, but this much we do know, that, while it may occur in those who are apparently otherwise in perfect health, it has a preference for persons of low vitality, and especially for those who are anæmic or chlorotic. It appears most frequently in early adult life, and more commonly in females than in males, and seems to be favoured by derangement of the digestive organs, constipation, and anomalies of menstruation. According to Duhring, "persons with light hair and complexion are more prone to the dry variety, while those with dark hair and skins commonly exhibit the oily form."[*]

Treatment.—Bearing in mind what has just been said, it is obvious that attention to the state of the general health is an important point in the treatment. Functional derangements of the digestive and uterine organs must be corrected, just as we would do if they occurred independently of seborrhœa; and, in every case, the more the patient is in the open air, and the more exercise is taken, short of fatigue, the better. In anæmic subjects, arsenic is our sheet anchor; in the chlorotic, iron[†] in full doses and perseveringly continued; and in the strumous, cod-liver oil.

The local treatment of both varieties is similar; but, in the case of seborrhœa sicca, our first care is to remove the crusts. The affected parts are saturated with oil, after which they may be covered up with flannel, and this in its turn with oiled silk or pure vulcanised India-rubber. The following day the crusts can be readily removed with tepid water and soap, or Hebra's "spiritus saponis alkalinus."[‡] "The integument having been thus cleansed," wrote Hebra,[§] "some ointment or fatty substance should be again applied, both for the purpose of relieving the very unpleasant feeling of tension left by the operation of washing, and also to prevent fresh scales being formed, which would otherwise quickly occur. I do not think, under these circumstances, it makes any difference whether we employ simple lard or an ointment containing a small quantity of oxide of zinc, white precipitate, tannin, or quinine. In any case, the good effects ought probably to be ascribed to the lard alone." In addition to this, the washing with soap and water should be repeated daily, or seldomer if the skin is at all irritated

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[*] *A Practical Treatise on Diseases of the Skin*, by Louis A. Duhring, M.D., 2nd Ed., p. 109, 1881. J. B. Lippincott & Co., Philadelphia.

[†] See Formula (p. 45).

[‡]

℞ Saponis viridis,	℥ij.
Spiritûs vini rectificati,	℥i.
Solve, filtra et adde.	
Spiritûs lavandulæ.	ʒij.
	—*M.*

[§] "On Diseases of the Skin," by Ferdinand Hebra, M.D. *New Sydenham Soc. translation*, vol. i., p. 120.

by it. If the skin is itchy, or congested, tarry preparations * may be employed, or ointments or lotions containing mercury † or sulphur.‡

Unna is in favour of the application of olive oil containing 2 per cent. of resorcin, and Jamieson of an ointment of tannic acid (grs. 10 to the ℥i).

In cases of *seborrhœa capitis*, we are more frequently consulted on account of the accompanying alopecia than on account of the crustation, so that it is always incumbent upon us to warn the patient that the first effect of our treatment will be to cause an increased fall of the loosened hair—the mere friction will do that—and that our aim is, not to save the existing hair so much as to cause the new hair to grow healthy and firm, as well as to get rid of the secretion.

The treatment of *seborrhœa genitalium* is very simple. The affected parts should be gently cleansed with soap and water, dried with a soft towel, dusted with a sedative or mildly-astringent dusting-powder,§ and separated by means of a small piece of lint or linen. In more obstinate cases, the surface may be sponged with a mild, astringent wash ‖ before applying the powder.

* ℞	Sol. picis (Guyot), ...	℥i.
	Glycerini (Price), ...	ʒvi.
	Aquæ destillatæ, ...	℥v.
		—*M.*
Or, ℞	Acidi carbolici crystallisati, ...	ʒij.
	Glycerini (Price), ...	ʒvi.
	Aquæ Cologniensis, ...	℥i.
	Aquæ destillatæ, ...	℥v.
		—*Solve.*
† ℞	Hydrargyri perchloridi, ...	gr. xij.
	Spiritûs vini rectificati, ...	℥i.
	Glycerini (Price), ...	ʒvi.
	Aquæ destillatæ, ...	℥v.
		—*Solve.*
Or, ℞	Hydr. ammoniati, ...	ʒiss.
	Picis liquidæ, ...	ʒss.
	Ung. petrolei, ...	℥i.
		—*M.*
‡ ℞	Sulphuris hypochloridi, ...	ʒiss.
	Glycerini (Price), ...	ʒi.
	Ung. simplicis, ...	℥i.
		—*M.*
§ ℞	Pulv. zinci carbonatis pur.	
	,, amyli.	
	,, lycopodii.	
	,, talci, āā, ...	℥ss.
		—*M.*
‖ ℞	Zinci sulphocarbolatis, ...	gr. iv.
	Glycerini (Price), ...	ʒi.
	Aquæ destillatæ, ...	℥ij.
		—*Solve.*

IV.—AFFECTIONS OF THE SUDORIPAROUS GLANDS.

The secretion from the sudoriparous glands may be either—1, Diminished; 2, Augmented; 3, Altered; or, 4, Retained.

1. DIMINISHED OR ARRESTED SUDORIPAROUS SECRETION.

Anidrosis.

This is usually accompanied by diminished sebaceous secretion, and produces a dry and rough condition of the skin. It may be due to want of sufficient clothing, to inattention to the skin, or to constitutional causes. It is an accompaniment of many diseases, such as ichthyosis, prurigo, marasmus, and diabetes mellitus and insipidus, in the last two being the natural result of the profuse discharge of water by the kidneys.

The **treatment** almost invariably resolves itself into that of the disease of which it is an accompaniment. If, however, it arises as an independent affection—a comparatively rare occurrence—hot, vapour, or Turkish baths, shampooing, and warm flannel underclothing may be recommended; and, along with this, if there is no contra-indication, active exercise in the open air, such as riding, golf, lawn tennis, &c.

2. AUGMENTED SUDORIPAROUS SECRETION.

Ephidrosis (*Hyperidrosis*).

As is well known, this is an accompaniment of many diseases, such as the sweating fever (sudor anglicus) described as having appeared in England in the sixteenth century, afterwards spreading to the continent of Europe, and said still to exist occasionally in certain marshy districts in France and elsewhere; rheumatic fever; ague, in the third stage of typical paroxysms; relapsing fever, at the close of the primary attack, and of each of the relapses; and phthisis, as the result of debility.

As an independent affection it is apt to occur in hot weather, especially in the case of corpulent persons; from the use of stimulating food and drink; as the result of excitement of the body or mind (fear, and the like); or from debility and a lowered tone of the nervous system; and some persons seem to have a constitutional tendency to perspire on the slightest causes, or even apparently without any cause at all.

A most remarkable case of this kind has recently been recorded by my friend, Dr. A. S. Myrtle, of Harrogate, which was also seen by Mr. Wheelhouse, Dr. Dreschfeld, and Mr. Arthur Jackson, none of whom had met with anything of the same nature before. "Mr. W.," he writes, "a hale, active, intelligent man, aged 77, was in the full enjoyment of health on February 14th, 1882; the next day he complained of flying pains in right hip, thigh, and foot, for which he kept his bed. I saw him on the 16th, the pains were increased on slightest movement, there was no fever, and all the functions were performed regularly; for three weeks he remained much in the same state, and found complete relief from occasional doses of salicylate of soda (10 grains). About the 8th of March he called my attention to the sodden condition of his skin. I found him perspiring freely, and looked on this new feature as a natural sequent to an attack of subacute rheumatism; the pains were neither better nor worse, but could always be relieved by the salicylate; he perspired at intervals most copiously till the 18th; the pains left him entirely about that date. His condition then was, appetite moderate, tongue clean, pulse and temperature normal, felt quite well in every way but for the perspirations, urine natural in quantity and character, no thirst, had once in the twenty-four hours a sense of chilliness, sometimes amounting to slight rigor, especially if the bed-clothes got off him. I put him on arsenic, cinchona, and sulphuric acid during the day, and quinine and belladonna at bed-time, ordered his body to be rubbed with warm towels, sponged with strong solution of salt, with eau de Cologne and vinegar, once a day, and his wet underclothing to be changed when practicable.

"On the 22nd the sweating, I thought, was somewhat diminished; when he fancied the arsenic disagreed with him, I gave it up. The perspirations came on in a most peculiar way; suddenly every duct opened and the sweat poured out; this would go on for ten minutes or ten hours, but invariably stopped as suddenly as it began; everything on and about him was simply saturated. Thinking there were indications of an aguish nature about him, I now gave him Warburg's tincture in full doses, and continued the quinine and belladonna at night.

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"About the 26th the sweat became most offensive, giving the same heavy smell as that given off by a horse after a smart gallop on a hot day. Oddly enough, his son was attacked with all the symptoms of hay fever when he entered the room, just as he is affected on going into a stable or hayfield; this smell was given off only occasionally, and chiefly during the morning.

"The frequency of the paroxysms of perspiration is illustrated by the fact that, between 8 a.m. on the 28th and 8 a.m. on the 29th, fifteen distinct bursts of perspiration were observed, lasting for from a few minutes to a couple of hours. The patient could tell the approach and cessation of each attack, and during the interval, after the sweat had been wiped off, the skin, although soft and sodden, was not wet; during the fit dry it as often as you could, it was no sooner wiped dry than the sweat was seen standing upon it."

During the whole course of the disease the patient said that he felt as well as ever he did; his mind was clear; and "to look at him lying in bed he appeared fresh and ruddy, just as he did when in health; the only thing that troubled him being that he could not assume the erect position without being faint." The urine was healthy in all respects from first to last, and with all the loss of fluid by the skin the secretion of the kidneys was never affected in quantity.

In addition to the above-mentioned treatment, ergotin and atropia were tried, but without effect. The only medicines which seemed to have even a temporary effect being Fowler's solution, along with Warburg's tincture.

"During the whole month of May there was little or no change in the symptoms, the perspirations were as frequent, as great, and erratic as ever. Towards the end of the month his strength began to fail, and his breathing occasionally became laboured, still he took his food, felt comfortable, performed all his functions, and passed good nights.

"On June, the 15th, he sank from exhaustion, perspiring to the end. Before his death he was as clear in his mind as ever he was."

As to the cause of the sweating, Mr. Wheelhouse's opinion was as follows:—

"I believe the mischief is in the sweat nerve centre, and the sweating and aguish attacks are due to an alternate paralysis and irritation of that centre, and that this condition arises from the presence of rheumatic poison in the blood."

Dr. Myrtle thought, on the other hand, that the condition was due to paresis of the terminal nerve filaments which preside over the healthy function of the sweat glands and ducts, that these filaments had become weakened by exposure to alternate heats and chills to which the patient had exposed himself for months in his open workshop, and that he had never been quite himself since he had fainted after having stood with some workmen for hours whilst a cold current of air had swept past him. "It was satisfactory," says Dr. Myrtle, "to find that we were pulling at the same rope, though at different ends; we both looked at the symptoms as having a neurotic origin."

Usually the perspiration is more or less generalised (ephidorsis universalis), but it may be partial (ephidrosis localis), and is sometimes limited to one side of the body or face, when it is supposed to result from faulty innervation of the sympathetic.

In support of this view Drs. Eulenburg and Guttmann* give the case of "a man, forty-four years of age, who, after even very moderate exercise, perspired profusely on the left side of the face, and occasionally also on the left side of the throat and neck. Simultaneously with the breaking-out of the perspiration the left side of the face and the left ear became red, and the temperature in the left external auditory meatus rose several tenths Centigrade above that in the right. There was also considerable injection in the vessels of the left conjunctiva, while lachrymation was sometimes more easily excited in the left eye than in the right. The left pupil was constantly more dilated than the right, but responded to the stimulus of light. . . . In the neighbourhood of the left cervical sympathetic there was some tenderness on pressure, perhaps the indication of a state of chronic inflammation of that nerve."

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* *Physiology and Pathology of the Sympathetic System of Nerves.* Translated by A. Napier, M.D. Churchill, 1879. P. 58.

It is often limited to the soles, palms, axillæ, groins, and genital organs, and, in the last three situations particularly, may lead to inflammation of the skin (intertrigo).

Ephidrosis palmaris.—Persons suffering in this way have moist, clammy, and cold hands from the rapid evaporation of the sweat; it may be so profuse, especially under the influence of nervous excitement, that little pools of it may form in the palm, or it may continually drop from the tips of the fingers. It gives rise to no pain, and is to the full as disagreeable to those who have occasion to shake hands with persons so affected, as to the patients themselves.

Ephidrosis plantaris.—The condition here presents somewhat similar symptoms, but it is a much more disagreeable affection, because the secretion is confined by the stockings and shoes, and is apt to inflame the soles; there is, too, maceration of the skin, which peels off, leaving them very tender. "The disease," writes Mr. Lewis Wilcox,* "begins as a small, irregular-shaped patch, usually situated at the back part of the sole of the heel, and is generally symmetrical, though one foot is sometimes affected rather before the other. The patch has a well-defined margin, is of a pinkish colour, pours out sweat profusely, and, during the day, has a sodden appearance, but in the morning, on first rising, is bright red, dry, and shiny. In a short time, the whole of the skin of the sole may be affected, including the plantar surface of the toes; and, in aggravated cases, there is usually superadded some amount of eczema. The affected parts are, from the very first appearance of the disease, tender; and, after a time, the tenderness is so great that all walking or standing is painful." According to Dr. George Thin, the mixture of sudoriparous and sebaceous secretion with the serum which exudes, affords a suitable pabulum for a species of bacterium, the bacterium fœtidum, which grows and multiplies, and is the source of the offensive odour so frequently encountered in such cases—so offensive as sometimes to banish such persons altogether from society.

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* *Brit. Med. Journ.*, Oct. 23, 1880.

The **treatment** of *ephidrosis universalis*, when it occurs as a symptom of constitutional diseases, is that of the affection of which it is an accompaniment; but, if it results from debility, we must do everything in our power to improve the general health. Tonics, such as quinine, the mineral acids,* strychnia, and arsenic, are specially to be recommended; and in obstinate cases remedies which have a specific effect in arresting the secretion may be employed. As has been pointed out by Dr. Sydney Ringer, diaphoretics in small doses—such as Dover's powder (gr. iii. to gr. v.) and nitrate of pilocarpine (gr. $\frac{1}{20}$ thrice daily) — have the remarkable property of checking excessive perspiration; but the most powerful of all remedies, in my experience, are picrotoxine, the active principle of cocculus indicus, and, above all, atropia, the active principle of belladonna, used subcutaneously. Of the former, an aqueous solution of 1 in 240 may be used, the initial dose being 5 minims: of the latter, gr. i. (of the sulphate of atropia) may be dissolved in 500 minims of water, the initial does being 5 minims. The dose of the remedy should be steadily increased, either until the sweating is entirely arrested, or until symptoms of an overdose begin to make their appearance, and in no case should the drug be omitted until some time after the sweating has ceased. Some benefit may also accrue from sponging the skin from time to time with vinegar and cold water, or with a tablespoonful of tincture of belladonna mixed with an equal quantity of water, or with a drachm of sulphate of quinine dissolved in a pint of rectified spirit.

In the treatment of *ephidrosis localis* internal remedies are not nearly so effectual, and we must resort to local treatment. As illustrative of the kind of treatment recommended for the local forms of excessive perspiration, we may take that variety which is the most troublesome, *ephidrosis plantaris*. All authors are agreed as to the importance of frequently changing the socks. Mr. T. Cayley Hutchinson † has seen a cure result by making the patient wear soft lambs' wool socks, and changing them frequently. Dr. Thin advises the changing of the stockings twice a day, and when they are removed he places the stocking feet in a jar containing a saturated solution of

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* ℞	Quiniæ sulphatis, ...	gr. xviij.	
	Acidi sulphurici aromatici, ...	ʒiij.	
	Syr. aurantii.		
	Inf. cascarillæ, āā, ...	℥iss.	
	Aquæ, ...	℥iij.	—*Solve.*

Sig., A tablespoonful in a glass of water thrice daily before food.

† *Brit. Med. Journ.*, Nov. 6, 1880.

boracic acid for some hours, which destroys the smell, after which they are dried and ready for use again. He also recommends the patient to provide himself with half a dozen pairs of cork soles, so that they may be changed often, and to soak them also in the boracic acid solution before they are again used.

Dr. J. W. Martin advises washing the feet night and morning with soap (terebene soap by preference) and water, and, after drying them with a soft cloth, sponging them with the following lotion :—

℞ Plumbi acetatis, ...	ʒi.
Aceti destillati, ...	℥i.
Spiritûs vini methylati, . . .	℥ij.
Aquam, ad	℥xvj.

—*Fiat lotio.*

Dr. Savitch (*Uratch*, No. 42, 1888, p. 848) strongly recommends the use of a good stearine candle finely powdered, and spread evenly in the stockings, and also between the toes. The stockings are worn for five days. Even the worst cases, he says, are cured in ten days (*i.e.*, after two dressings).

In the Russian army a favourite remedy is a 5 to 10 per cent. solution of chronic acid which is painted on the feet after they have been carefully washed and dried. Generally, one application is sufficient, but sometimes a second is required in about a week. It is inadmissible, however, if there are any sores on the feet.

Dr. Simonton* recommends the use of *finely pulverised* alum. Whenever the feet are perspiring the powder is sprinkled freely between the toes and over the bottom of the foot, and wherever it is moist. The insides of the socks are also dusted with the same. In two or three days the socks should be changed (daily is preferable I think) for clean ones, when the application of the powder is repeated. By keeping up this treatment the feet become hardened, and the tendency to sweating falls to a minimum. In the slighter forms of ephidrosis, Hebra† advises the use of a lotion of tannic acid (one drachm in six ounces of alcohol) which is to be rubbed into the parts several times a day. A little powdered asbestos is then sprinkled on while the surface is still wet, and with this it is again rubbed till it is dry. In intense forms of the affection, in which there is fœtor, he favours the following treatment, in addition to changing the stockings :—"A certain quantity of the simple diachylon plaister (emp. plumbi, emp. lithargyri) is to be melted over a gentle fire, and an equal weight of linseed oil is then to be incorporated with it, the product being stirred till a homogeneous mass is produced, sufficiently adhesive not to crumble readily to pieces. This is then to be spread over a piece of linen, measuring about a square foot. The foot of the patient, having been first well washed and thoroughly dried, is now to be wrapped in the dressing thus prepared. Pledgets of lint, on which the same ointment has been spread, are also to be introduced into the space between each pair of toes, to prevent their touching one another ; and care must be taken that the foot is completely covered, and that the dressing is accurately in contact with the skin." An ordinary stocking and a light new shoe, which does not cover the dorsum of the foot, are then put on. The dressing is repeated night and morning, the parts being thoroughly wiped but not washed, before each reapplication. "In the course of a few days it will be found that a brownish-yellow layer of cuticle, about ½ inch thick, is beginning to peel off from all those parts of the skin which were before affected with the disease, and that a healthy, clean, white surface of epidermis is exposed as this substance separates." When this occurs the foot may be washed and a dusting powder rubbed daily into the part for some little time. In this way within three weeks a cure may result, but should a relapse occur, a second course of the same treatment is pretty sure to effect a permanent cure. Instead of the ointment employed by Hebra, Martindale's modification of it, composed of equal parts of lead plaster and vaseline, may be used (it may be perfumed with oil of bergamot), or the benzoated zinc ointment may be tried. Or, as suggested by Mr. Lewis Willcox,* wide straps of ordinary adhesive plaster—either emplastrum saponis or emplastrum plumbi—may be used. Every part should be completely covered, and with two layers of plaster if the complaint be very bad. It may be renewed in three or four days, and once again at the expiration of a week, when a cure will often result.

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* *Therap. Gaz.*, March, 1881.

† "On Diseases of the Skin," by Ferdinand Hebra, M.D. *New Syd. Soc. translation*, vol. i., p. 89, 1866.

The above methods of treatment may be combined in various ways, sometimes one plan proving more efficacious than another, and experience has shown that with their aid good results may confidently be anticipated.

3. ALTERED SUDORIPAROUS SECRETION.

(*a.*) **Bromidrosis** (*Osmidrosis*).

One form of this has already been described (see ephidrosis plantaris, p. 86), but other parts may be affected in a somewhat similar way, such as the axillæ and genital organs; and in these situations it must be admitted that often, at least, the offensive odour may result simply from the decomposition of the sebaceous secretion mixed with emanations from the clothing. It is worst in summer, and is more pungent the less frequently the clothing is changed.

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* *Brit. Med. Journ.*, Oct. 23, 1880.

I have nothing further to add with regard to the treatment of this condition, which has already been fully discussed under the head of ephidrosis localis (p. 87).

(*b.*) Chromidrosis.

By this, which is a rare affection, is meant coloured perspiration. It is oftenest met with on the face, especially on the lower eyelids, particularly in unmarried women suffering from uterine disorder. It may be the result of fraud, or of staining of the secretion with colouring matter imparted to it from the clothing, or of abnormal colouring matter derived from the system, or on hairy parts, from the growth of coloured bacteria. "The colouring matter," says Tilbury Fox,* "is probably *indican*, which is, as it normally exists, colourless, and occurs pathologically in human urine. The indican is believed to be secreted by the sweat glands in a colourless state, and to be acted upon by the air so as to be oxidised blue, or brown, or blackish, as the case may be." It is sometimes also due to the presence of copper or of iron in the system.

Having never met with a case of this rare disorder, I can offer no reliable opinion as to its treatment, although I conceive that it must be attacked in a similar way to cases of ephidrosis localis, previously referred to, along with careful attention to the general health. But in all cases we must take care that we are not being imposed upon. To prevent this, cleanse the surface with oil, then dry it, and paint it with collodion. On removing the pellicle in a few days the coloured perspiration should be apparent.

4. RETAINED SUDORIPAROUS SECRETION.

(*a.*) Sudamina (*Miliaria?*).

This eruption consists of little elevations of the cuticle, about the size of pin-heads, filled with a watery fluid (miliary vesicles), which consists of the secretion from the sudoriparous glands; it is usually clear and transparent, but may become opaque from admixture with epithelial cells, or even sometimes with pus corpuscles, and on pricking the vesicles the fluid readily escapes. These, which are generally in great numbers, never run together; they are most abundant on the trunk of the body, and are met with in those who have been perspiring freely as the result generally of some acute affection, such as rheumatic or enteric fever. They run an acute course, dry up in a day or two, and are followed by slight desquamation, and often by some itching.

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* *Skin Diseases*, third edition, p. 482. Renshaw, 1873.

This eruption was much more frequently met with in former times than at present when we generally aim at keeping a fever patient cool and comfortable, and not oppressing him with bedclothes and keeping him bathed in perspiration. For it is due to the excessive secretion of sweat, some of which, as the result of obstruction at the orifices of the glands, instead of escaping through the ducts, accumulates beneath the epidermis, which it raises in the form of minute vesicles. Dr. Joseph Coats' observations tend to show that the blocking of the ducts, in the horny layer of the epidermis, is due to an accumulation of leucocytes, the result of an inflammatory process.*

Sudamina result from retention of sweat within the corneous layer of the epidermis, but Dr. A. R. Robinson † has described a somewhat allied condition, with which I am familiar, which he holds to be a cystic dilatation of the excretory sweat duct lying within the corium, and for which he proposes the term *hydrocystoma.* It generally occurs on the faces of women, at and after middle life, who perspire freely—especially washerwomen and cooks—and is always most pronounced in summer. The parts peculiarly liable to attack are "the lower part of the forehead, the orbital region, the nose, the cheeks, and often the upper and lower lips."

The eruption consists of discrete, "tense, clear, shiny vesicles, obtuse, round or ovoid in form, and varying in size from that of a pin-head to that of a pea. They are, at first, always deep seated—that is, their base reaches deep into the corium—but on account of their size they are usually more or less elevated above the general surface. The smaller ones, especially, bear considerable resemblance to a boiled sago-grain. The larger lesions sometimes have a darkish blue tint, which is most marked at the periphery." They do not rupture readily. On puncturing a vesicle a clear, slightly acid, fluid exudes, which is apt to re-accumulate unless its base is touched with fluid carbolic acid or the like. The cause of this condition is obscure.

Diagnosis.—I can hardly conceive how any one who has seen a case of sudamina can confuse it with any other affection. It is said, however, to have been mistaken for eczema; and no doubt it resembles eczema in so far as the eruption consists of minute vesicles, and is often accompanied by itching. But in sudamina the vesicles, although exceedingly numerous, are discrete, and do not rupture spontaneously; the eruption runs a definite and short course, is always accompanied by perspiration, and disappears with the cause which has produced it.

Treatment.—It is unnecessary to dwell upon the treatment of this condition, as it resolves itself into that of ephidrosis universalis, which has already been considered (see p. 87), or of the disease of which the perspiration is a symptom, and as it disappears speedily, even when no special treatment is adopted. Should, however, there be much irritation of the skin, a mild astringent lotion may sometimes give relief.* It is almost superfluous to add that, in every case, the bed and body clothing should be frequently changed, if they become damp (a night-dress made of thin flannel is cool and absorbs the perspiration); we should do our best to keep the patient cool; and if the disease of which the eruption is a symptom, is accompanied by high fever, antipyretic remedies, to which we need not specially refer at present (see general management of a case of fever), should be resorted to.

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* *Glasg. Med. Journ,* July, 1892, p. 56.

† *Journ. of Cut. and Genito-Urinary Diseases,* August, 1893.

(*b.*) Dysidrosis (*Tilbury Fox*).

The condition described by the late Dr. Tilbury Fox under this head is said to be oftenest met with in summer, in those who are suffering from great nervous debility, who are generally thin, pale, anxious-looking, and depressed, and who perspire too freely. It is supposed to be the same affection as has been described by Hutchinson under the name of cheiro-pompholix, and by Robinson under the head of pompholix.

The eruption is sometimes met with on the feet, but much more frequently on the hands, especially between the fingers, on their palmar surfaces, and on the palms. Minute vesicles, accompanied by burning and itching, due to distension of the sweat ducts with altered sweat, make their appearance; these are at first isolated, deeply embedded, and with little tendency to burst. After a few days they come to resemble sago-grains, gradually become prominent, but not pointed, assume a faint yellow colour, and have a tendency at last to run together, and even to form bullæ; the hand then becomes stiff and painful. By degrees the fluid is absorbed, and the cuticle exfoliates, leaving a red and tender cutis exposed, and sometimes the epidermis, especially about the root of the fingers on their palmar aspect, becomes sodden and like chamois leather. It is always accompanied by much itching and a good deal of burning, and it "may be complicated by a rash, more or less general, over the body. In some cases it may be limited to the back of the hands and the forearms, or it may be, in severe cases of the disease, seen about the face, the neck, and on the trunk, the body, and the feet. This eruption is similar to that of lichen tropicus and miliaria; it is hyperæmia of the

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* ℞ Liq. plumbi diacetatis dil., ...	ʒiv.	
Glycerini (Price), ...	℥ss.	
Aquæ Cologniensis, ...	℥i.	
Aquæ destillatæ, ...	ʒivss.	—*M.*

Sig., Sponge the parts when they are irritable.

sweat follicles. It is very itchy." * The disease is usually of short duration, lasting, as a rule, from ten days to two or three weeks.

It may be mistaken for eczema, into which, indeed, it occasionally passes, but the diagnosis may generally be made by bearing in mind that it is the hands which are usually attacked; that the vesicles, instead of being distended with serum, are filled with sweat, and do not rupture; that there is no tendency to exudation on the surface of the skin (leeting); that there is no formation of pus; and that crusts are not observed.

The eruption just described under the name of sudamina bears no resemblance to dysidrosis, and in the former, as pointed out by Fox, the vesicles are due, not so much to distension of the sweat follicles (as in the case of dysidrosis), as to uplifting of the horny layer of the epidermis by sweat. Fox's opinion, that this eruption is primarily an affection of the sudoriparous apparatus, is denied by many observers, and Mr. Winkelried Williams states that his sections show the anatomical life-history to be as follows:—

1st. A mild inflammatory action in the papillary layer of the corium results in an exudation of serum, which finds its way between the rete cells, and leads to their compression, degeneration, and destruction.

2nd. Vesicles are thus formed, which receive fresh fluid, and thus increase in size.

3rd. The vesicular contents dry up, fresh epithelium forms below, and the superficial, together with the dried vesicular contents, are desquamated. †

Treatment.—Dr. Tilbury Fox insisted strongly upon the necessity of commencing the treatment with diuretics, such as acetate of potash, with ammonia and juniper, together with some simple aperient. At the same time, any derangement of the general health — such as dyspepsia, anæmia, or amenorrhœa—must be corrected in the same way as we would do when such conditions occur independently. Further, bearing in mind what has been said as to the etiology of the affection, it is obvious that all causes of depression of the nervous system—such as overwork, anxiety, and worry—must be removed, and nerve tonics, as quinine, strychnia, and arsenic, are often of service. In rheumatic or gouty subjects, Fox gave alkalies, especially large doses of the Vals waters, with meals.

Externally, the little blisters may be punctured and sedatives used, such as stripes of linen spread with diachylon ointment. Sometimes too the best results are obtained from wearing a pair of gloves made of pure vulcanised india-rubber.

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* *Skin Diseases: their Description, Pathology, Diagnosis, and Treatment.* By Tilbury Fox, M.D. Third Edit., p. 477. 1873. Henry Renshaw.

† *Brit. Journ. of Derm.*, Oct. 1891, p. 308.

B. ORGANIC AFFECTIONS.

I. INFLAMMATIONS.

I. THE ERYTHEMATA.

The term erythema implies a simple superficial inflammation of the corium: it is the most trifling of all the inflammations of the skin, but it includes a variety of affections, all of them closely allied anatomically, though many of them are quite distinct, both as regards their etiology and nature.

1. Erythema simplex.—This affection, which may involve any part of the skin, constitutes the early stage of one form of eczema (E. erythematodes), and almost all varieties of eczema terminate in it, so that it must be looked upon in the light of a lower grade of inflammatory action, and as dependent upon similar causes.

In the acute stage the skin is the seat of redness which temporarily disappears upon pressure, sometimes accompanied by swelling, and generally by more or less heat; but there is no moisture or appreciable infiltration of the skin, and the redness, as a rule, shades off into the colour of the healthy parts. Unless the inflammation is very extensive or very acute, the constitutional reaction is either trifling or absent. When the acute stage is passed, the redness is less pronounced, and may in great measure disappear, the feeling of heat is accompanied or replaced by itching, and the surface is the seat of furfuraceous desquamation. To this scaly stage the term pityriasis is often applied, but the same name is given to other affections of a scaly nature—seborrhœa sicca, for example—so that confusion would be avoided were it possible to discard it.

The shape of the patches and the extent of the eruption vary very much, and it is a common thing to find erythema on some parts and eczema on others—*e.g.*, erythema of the body and eczema of the head—thus betraying their common parentage.

Diagnosis.—The diseases most likely to be mistaken for erythema are eczema, syphilis, erysipelas, and urticaria. As regards the first, it is sufficient to recall the fact that erythema is of the same family as eczema, and that the line of demarcation may be said to be passed when, in addition to the above-mentioned symptoms of erythema, infiltration of the skin, exudation on the surface, or crustation is apparent. The diagnostic points in connection with the other three diseases may best be stated in tabular form.

Erythema.	**Erythema syphiliticum.**
1. Colour usually pink.	1. Tint deeper, in chronic stages coppery, and surface often glazed.
2. Itching or heat present.	2. Very insensitive.
3. Little or no pigmentation left.	3. Surface pigmented for some time after disappearance of rash.
4. No history or symptoms of syphilis.	4. History of infection; and other syphilitic manifestations present—*e.g.*, sore throat, alopecia, gland enlargements, nocturnal pains, condylomata, &c.
5. Yields to simple treatment.	5. Yields readily to anti-syphilitic treatment.

Erythema.	**Erysipelas.**
1. Fever slight or absent.	1. Constitutional reaction well marked.
2. Local symptoms not severe.	2. Local symptoms more grave—skin dusky red, more swelling and burning heat.
3. No vesication unless disease passes on to eczema.	3. Blisters common at the height of the eruption.
4. No distinct, abrupt line of demarcation between healthy and diseased skin as a rule.	4. Edge abrupt and elevated in the advancing stages.
5. Does not usually spread rapidly.	5. Tends to creep along the skin, and rapidly to invade contiguous parts.
6. May attack any part of the surface.	6. Usually the face or head, unless traumatic when the locality depends upon the seat of the wound.
7. Of indefinite duration.	7. Runs a definite course, and terminates usually in from one to three weeks.

Erythema.	**Urticaria** (*nettlerash*).
1. Etiology very varied, and that of eczema.	1. Often some obvious source of irritation—*e.g.*, eating something indigestible.
2. Eruption rarely very transient.	2. Very evanescent, disappearing often in a few hours, although successive crops may prolong the disease indefinitely.

3. Appearance of eruption as already described.	3. Eruption tends to appear in elevated wheals, the centres of which are often white and the edges red.
4. Itching moderate as a rule.	4. Itching usually excessive.
5. Fever usually absent.	5. Often fever in acute cases.

It must be mentioned that urticaria sometimes takes the form of erythematous patches which cannot be distinguished from erythema simplex; but the suddenness with which it comes out, and the rapidity with which it vanishes, should lead one to suspect that it is a member of the nettlerash family. Some cases of the so-called erythema fugax are of this nature.

While erythema simplex may appear upon any part of the surface, there are three localities in which it is specially frequent, and to which further reference must be made. These parts are the head, the face, and portions of skin which are in contact with one another.

(*a*) **Erythema capitis** (*pityriasis capitis*).—This is usually a very chronic affection, one which may attack the head at parts, but which more frequently involves the whole scalp. Unless the eruption is widespread, the face, contrary to what one might expect, usually escapes. It is very annoying to patients, not only on account of the itching which constrains them to scratch the head in season and out of season, but also on account of the scales which often fall in profusion on the shoulders and other parts of the clothing, and because the hair often comes out in great abundance by reason of the interference with its nutrition.

The diseases most likely to be mistaken for erythema capitis are seborrhœa sicca (also often termed pityriasis capitis), psoriasis capitis, and tinea tonsurans.

Erythema capitis.	Seborrhœa sicca capitis.
1. Scales brittle; cannot be kneaded into a ball.	1. Scales not brittle; can be kneaded into a waxy ball.
2. Consist mostly of epithelial cells.	2. Crusts consist of sebaceous matter—*i.e.*, epithelial cells infiltrated with oil globules.
3. Skin beneath scales more or less reddened and inflamed.	3. As a rule, little, if any, redness under the scales.
4. Itching very marked as a rule.	4. Itching not usually very great.
5. Erythema or eczema sometimes on other parts.	5. Often seborrhœa elsewhere (face, chest, &c.)

Erythema capitis.	Psoriasis capitis.
1. Whole head affected, or, if patchy, no sharp line of demarcation at edges.	1. Generally in patches, with abrupt and more or less rounded edges.
2. Scales thin, small, and readily detached.	2. Scales thicker and more imbricated, more silvery and adherent.
3. Itching pronounced.	3. Itching not so constant or severe.
4. Eruption, if on non-hairy parts also, presents the typical characters of erythema.	4. Eruption usually on other parts—especially on elbows and knees—when the characteristic appearances are displayed.
5. Usually accompanied by falling of the hair.	5. Hair usually unaffected.
6. No special tendency to relapses.	6. Relapses the rule, especially in autumn and spring.
7. Not hereditary.	7. Hereditary tendency to psoriasis often pronounced.

Erythema capitis.	Tinea tonsurans (*ringworm of the head*).
1. Generally met with in adults.	1. Only met with in children.
2. Not infectious.	2. Very infectious.
3. Whole head affected, or, if patchy, no sharp line of demarcation at edges.	3. Generally in rounded patches with abrupt edges.
4. Surface reddened, and scales thin and grayish.	4. "Plucked fowl" appearance, and surface often white from fungus.
5. Hairs fall readily, and bulbs atrophied, but otherwise healthy.	5. Many of hairs brittle, twisted, or broken off close to surface, and often white with parasitic dust.
6. No fungus detected in hairs or scales.	6. The tricophyton detected microscopically in diseased hairs and scales.
7. Eruption, if on non-hairy parts, presents the typical characters of erythema.	7. Eruption often on the body in the shape of round patches or circles (tinea circinata).

(*b*) **Erythema faciei.**—This eruption is apt to be induced by frequent washing with cold spring water: it has a special tendency to appear in spring during the prevalence of east wind (one form of the so-called "spring-blossoms"), and in summer from exposure of the face to a hot sun (erythema solare). Sometimes it is a chronic affection, but more often it is acute, and comes and goes with the cause which has induced it. When very evanescent it, as well as other varieties of erythema, is often spoken of as E. fugax. It has a special tendency to attack the prominences of the brow and cheeks, the sides of the nose, and the vicinity of the mouth, and patches of it are also often observed upon the neck. It is a source of much annoyance owing to the redness, stiffness, and burning heat in the acute, and to the itching and desquamation in the chronic stage.

(*c*) **Erythema intertrigo.**—The term intertrigo (*inter* between, and *tero* I chafe) has reference to an inflammatory affection at parts where opposed surfaces are in contact with one another—as between the hips, at the flexures of the thighs, in the arm-pits, and underneath pendulous mammæ, as also between the glans and prepuce, and at the vulva, the inflammation being favoured by the heat, moisture, and friction to which the parts are subjected. It is especially apt to occur in infants, in corpulent persons, in those who perspire readily, and during hot weather. It is to prevent such an occurrence in infants that violet powder is so universally employed. The affected surface is not only reddened, but often has a glazed appearance; the itching is often intolerable, and the scratching leads to excoriations and pain. There is no inflammatory exudation, unless the affection, as often happens, passes into eczema (eczema intertrigo), but the epidermis is apt to be macerated, and the surface is often moist owing to the normal secretions which, in a more or less decomposed state, remain on the part.

Other Varieties of Erythemata.

2. **Erythema strophulus.**—This eruption was described by Willan and Bateman under the name of strophulus, and is a frequent affection in infants as the result of errors of diet, indigestion, teething, or other forms of irritation. It consists of papules, which are firm, of a vivid red colour, and sometimes interspersed with patches of erythema simplex. The eruption is very itchy. It is very closely allied to, if it be not identical with, the affection termed lichen disseminatus in adults. It must, therefore, be considered in the light of an early stage of the papular or lichenous form of eczema, just as simple erythema is the early stage of erythematous eczema. The only diseases likely to be mistaken for it are scabies and lichen urticatus.

Erythema strophulus.	**Scabies** (*The Itch*).
1. Not contagious.	1. Very contagious.
2. Situation of eruptions produced by scratching depends on the seat of the papules.	2. Eruption produced by scratching, most abundant on forearms, abdomen, and inner sides of thighs.
3. No special tendency to production of pustules.	3. Large pustules on hands, feet, and hips very common.
4. Nipples and penis not affected.	4. Nipples in female, and penis in male, often implicated.
5. No furrows to be found.	5. The furrows (canals) made by the impregnated female detected about fingers, toes, wrists, &c., containing eggs with the female at the end of each.
6. Cured by attention to the digestive organs, &c.	6. Cured by the use of a parasiticide—*e.g.*, sulphur.

Erythema strophulus.	**Lichen urticatus.**
1. Small red papules.	1. Papules larger and often whitish in centre, and red at edges.
2. Eruption not so evanescent.	2. Very evanescent, generally coming out on getting warm in bed.
3. No special tendency to come out in successive crops.	3. Comes out invariably in successive crops.
4. Eruption not so itchy.	4. Itching very great, and summits of papules often torn by nails, leaving blackish crusts.
5. Removed by attention to digestive organs and bowels, and locally by anti-pruritic remedies.	5. Requires, in addition, the special treatment mentioned under urticaria.

3. **Erythema punctatum**—[Syn. *E. scarlatiniforme* (Hardy), *Roseola scarlatiniforme* (Bazin)].—This eruption, which seems usually to be dependent upon digestive derangement, or upon a chill, or a combination of both, often sets in with slight and transient fever, which is followed very shortly by a punctated eruption on the skin, which rapidly spreads until the whole surface may assume a bright red colour like that of a boiled lobster. In a few days this subsides, being followed generally by slight desquamation of the skin. It is unnecessary to describe it at length, because the constitutional symptoms are very similar to those of a very mild attack of scarlatina, while the eruption is almost identical in appearance and similar in duration. The following points should, however, prevent error:—

Erythema punctatum.	Scarlatina.
1. Usually results from digestive derangement.	1. Results from exposure to the specific poison.
2. Never spreads to others.	2. Very apt to spread to others, unless every precaution is taken.
3. Pulse not much affected.	3. Pulse very rapid.
4. No characteristic appearance of the tongue.	4. The "strawberry tongue" of scarlatina commonly observed.
5. Little, if any, sore throat.	5. Angina usually a prominent symptom.
6. May commence at any part.	6. Commences usually on neck and top of chest, whence it spreads down the body.
7. No sequelæ.	7. "Scarlatinal dropsy," and "S. bubo," and suppurative inflammation of middle ears, common sequelæ.
8. An attack is no protection against scarlatina.	8. An attack usually protects the system from another.

4. **Roseola.**—This variety of erythema can usually be traced to the same causes as the last, and may take the form of a transient congestion of the skin, or may pass on to mild inflammation. In any case it occurs in the shape of erythematous blotches varying in size from a pea to a finger-nail, little elevated, and giving a pinkish, mottled appearance to the surface. It is most often observed upon the trunk of the body; the itching, if present, is usually slight, and there is little if any desquamation.

It somewhat resembles the mottling of the skin observed in typhus, and may be mistaken for syphilitic roseola, and for the rash produced by the administration of copaiba.

Simple roseola.	Typhus rash.
1. Dependent upon digestive derangment and the like.	1. Due to a specific poison.
2. Not infectious.	2. Very infectious.
3. Slight, if any, constitutional reaction.	3. Disease sets in suddenly, often with rigor, and eruption appears from 4th to 7th day, there being well-marked fever throughout, which tends in the 2nd week to assume the typhoid type.
4. Eruption consists of pinkish blotches which disappear on pressure throughout.	4. Eruption dusky-red or livid, after a day or two does not completely disappear on pressure, and often becomes petechial.

Simple roseola.	Syphilitic roseola.
1. Preceded by digestive derangment or the like.	1. Preceded by chancre, followed in a month or two by eruption.
2. Pinkish blotches on the affected parts.	2. Dusky-red, or even coppery blotches.
3. Often some itching.	3. No itching.
4. Usually of short duration.	4. May last for many weeks.
5. No other symptoms present.	5. Other manifestations of syphilis—*e.g.*, alopecia, ulceration of mouth and throat, gland enlargements, nocturnal pains, condylomata, papular eruption, &c.

Simple roseola.	Copaiba rash.
1. Preceded by digestive derangment or the like.	1. Occurs in those who have been taking copaiba, and odour of the medicine often perceptible in the urine.
2. Eruption generally on trunk; face and hands usually escape.	2. Eruption very extensively diffused as a rule, and face and hands especially liable to suffer.
3. Itching slight, if any.	3. Usually intensely itchy.
4. Duration of eruption uncertain.	4. Disappears within a few days of the cessation of the medicine.

5. Erythema circumscriptum—[Syn. *Lichen circumscriptus, Lichen circinatus serpiginosus* (Wilson); *Seborrhœa corporis* (Duhring); *Eczema seborrhoicum* (Unna)].—This eruption is met with almost exclusively on the chest and on the back between the scapulæ, and frequently implicates both parts simultaneously. It commences as minute red or salmon coloured spots or papules, which gradually increase in size, and soon heal in their centres, leaving erythematous rings which have sharp edges, and sometimes present a finely papulated appearance. These rings are often of very small size—3 or 4 lines in diameter; but, especially on the back, they have a tendency gradually to increase until neighbouring rings meet, and the final result is wavy or serpiginous lines of eruption, their long axis being generally at right angles to the vertical axis of the body. The eruption is usually the seat of slight furfuraceous scales, and is often very itchy, especially when the patient is warm and perspiring.

We are very ignorant of its etiology. No fungus has been discovered in the scales, although the appearance of the eruption is suggestive of a parasitic origin. According to Duhring, Colcott Fox, and others, it is a form of seborrhœa. In support of this view it may be stated that the eruptive elements are situated at the orifices of the sebaceous glands, that the skin has often an oily feeling, the scales are more or less fatty, the affection is usually associated with seborrhœa of the scalp, and, in my experience, it almost always occurs in those who do not remove their flannel underclothing at night.

It is a relapsing affection, and in some persons only disappears in summer, to reappear at each succeeding winter.

It may be mistaken for tinea versicolor and tinea circinata, but the following points should prevent error:—

Erythema circumscriptum.	**Tinea versicolor.**
1. Eruption red or salmon coloured.	1. Yellowish or brownish.
2. Circular or serpiginous in shape.	2. Rarely any circles, but irregularly shaped patches with minute points of eruption at their edges.
3. Not contagious, and no fungus.	3. Contagious to some persons, and fungus (microsporon furfur) readily detected.

Erythema circumscriptum.	**Tinea circinata.**
1. A chronic affection in most cases.	1. An eruption of short duration.
2. Usually accompanied by seborrhœa of scalp.	2. Sometimes accompanied by ringworm of head or beard.
3. Not contagious.	3. Very contagious.
4. Fo fungus to be discovered.	4. The characteristic fungus (tricophyton) discovered in early stage.
5. Eruption on chest and back, and circles usually of small size—symmetrical.	5. Eruption anywhere, and rings more elevated, more scaly, occasionally studded with vesicles, and often of large size—unsymmetrical.

The diagnosis of erythema circumscriptum from pityriasis rosea will be given after the latter affection has been described.

6. **Pityriasis rosea** — [Syn. *Pityriasis rosé* (Gibert); *pityriasis maculata et circinata* (Duhring); *roséole squameuse* (Fournier)].—This affection, first accurately described by Gibert,[*] is by no means a

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[*] *Traité pratique des maladies de la peau.* Ed. III., tome i., p. 402. Paris, Henri Plon.

common one, though perhaps not so rare as some suppose, as it is apt to be overlooked or mistaken for other diseases. We know very little with regard to its etiology and nature, although the appearances which it presents are suggestive of a parasitic origin. Indeed, Vidal is of opinion that it is due to a minute fungus which he has named the microsporon anomæon, but this view has not gained general acceptance, and certainly there is no evidence of its being contagious. It may occur at any age, although it is oftenest met with in children and young adults, and it is more frequent in females than in males, and in those with white and delicate skins. It is seen at all seasons, but probably most commonly in warm weather.

Clinically it is a very definite and distinct pathological entity. A symmetrical affection of gradual or sudden onset, it appears usually first on the front of the chest, especially over the upper part of the sternum and sub-clavicular regions, whence it spreads to the neck, upper arms, trunk, and thighs—the forearms, legs, head, and face generally escaping, in great part or entirely. Little pale-red or rosy spots are developed in successive crops: these are at first the size of pin-heads, but they gradually increase until they may have the diameter of a shilling or more, and, as they do so, they heal in their centres, leaving circles of eruption with sharply-defined edges; and if, as often happens, neighbouring spots coalesce, variously figured patches result. The eruption, which is the seat of scanty furfuraceous desquamation, is more or less itchy, especially if the patient is heated and perspiring. In the later stages, the colour of the eruption changes from rosy-red to yellow or tawny, and pigmentary stains for a time mark the seats of the previous patches. It runs a definite course, the parts first affected being the first to recover, and its whole duration is seldom more than three months, and often only as many weeks.

It may be mistaken for erythema circumscriptum (lichen circumscriptus—seborrhœa corporis), tinea versicolor, tinea circinata, and erythematous syphilitic eruptions.

(*a*) *Erythema circumscriptum* is a much more chronic affection, does not run a definite course, and has a much greater tendency to relapse. It is almost exclusively met with on the chest and back, and usually coincides with seborrhœa capitis. The circles of eruption, too, are often of very small size, the patches have a more papulated character, while the skin has often an oily feeling, and the scales are more or less fatty.

(*b*) *Tinea versicolor* has less of a rosy, more of a yellow or yellowish-brown colour, and, when the eruption becomes confluent, the patches are often very extensive, much more so than we ever observe in pityriasis rosea, while they have no tendency to form circles or segments of circles. The disease is also contagious, though not extremely so, and the fungus (microsporon furfur) can readily be found in the scales, so that, if we are on our guard, a mistake is impossible.

(*c*) *Tinea circinata* (ringworm of the body) is distinguished from pityriasis rosea by the fact that it is unsymmetrical, that it has no special tendency to commence on the front of the chest, but may appear upon any, especially upon uncovered, parts; that the patches are more distinctly elevated, and the rings often of large size. It is contagious, too, the fungus (tricophyton) being generally found in the scales. Finally, it not uncommonly occurs in those who are suffering from tinea tonsurans (ringworm of the head), or tinea sycosis (ringworm of the beard).

(*d*) *A circinate, erythematous, syphilitic eruption* is easily distinguished from pityriasis rosea if it is borne in mind that it has a more dusky or even coppery tint, and is not the seat of any itching; that it occurs in those who have recently contracted syphilis, and that it almost invariably coincides with other syphilitic manifestations.

7. **Erythema multiforme** (including erythema papulatum, tuberculatum, annulare, gyratum, marginatum, and iris; also herpes iris, and one form of herpes circinatus).—This eruption is a constitutional, and therefore a symmetrical one: it has a special tendency to attack the backs of the hands, fingers, and forearms, and is often limited to these parts, but frequently the dorsum of the foot and front of the leg are also invaded: in more severe cases the thighs and upper arms, and even the trunk and face are implicated. But, wherever else it may appear, the first-named localities are pretty sure to suffer.

The eruption, as its name implies, is remarkable for the variety of forms which it may assume. It commences as erythematous blotches, or as papules (erythema papulatum), or tubercles (erythema tuberculatum), varying in size from a lentil to a bean. At first they may be rosy red, but soon they become violaceous or livid in tint, and for the first day or two the surrounding skin may be congested and reddened. In slight cases this is all that is observed, and the eruption may disappear within a week, leaving a little transitory pigmentary staining.

But, in typical cases, the papules or tubercles begin to flatten out, and to spread circumferentially, while healing in the centre, so that rings of eruption are left enclosing slightly pigmented skin (erythema annulare). Sometimes a new ring develops around the first, or a new papule forms in the centre of the ring, constituting the so-called erythema iris. Occasionally the rings are the seat of vesicles, constituting one variety of herpes circinatus, or herpes iris, and now and then bullæ make their appearance (erythema bullosum). If the erythematous rings continue to increase, neighbouring ones coalesce, and thus wavy lines, composed of segments of circles of the original rings, are left (erythema gyratum—erythema marginatum). Sooner or later these wavy lines, getting thinner and thinner, disappear, leaving for a time some pigmentary staining which marks the seat of the previous eruption.

It will thus be seen that the first stage of the disease is erythema papulatum or tuberculatum, and the last, erythema gyratum or marginatum; and the name given to the disease is apt to depend upon the stage at which it is seen. But, as was first pointed out by Hebra, it is incorrect to speak of these varieties of form as if they were separate diseases, seeing that they are but stages of one affection, to which he very appropriately gave the name of erythema multiforme. In some cases the mucous membranes, especially the bucco-pharyngeal mucous membrane, are implicated, being the seat of red patches, the epithelium covering which becomes grayish and detached, leaving painful and abraided surfaces.

When the eruption comes out rapidly and extensively there may be slight fever at the outset, and even transitory pains in the joints, which are supposed by many to indicate an alliance with the rheumatic diathesis, although such a connection is not so obvious as in erythema nodosum about to be described. The eruption is not the seat of much discomfort, though slight burning and a feeling of tension may be present in the acute stage, and slight itching, with transitory desquamation, in the chronic. Occasionally the eruption is complicated with œdema, especially at parts where there is much loose cellular tissue, and exceptionally there is actual hæmorrhage into the substance of the skin. The duration of the affection is usually from one to four weeks, but it may be much prolonged owing to the occurrence of successive crops of eruption.

It is generally met with in young adults, in males more frequently than in females, and it has a great tendency to appear in spring and autumn, especially during the months of March, April, May, October, and November. It is a recurrent affection, and is very apt to reappear during the same month each year. Although there is some doubt as to its connection with the rheumatic diathesis, it is quite certain that functional derangement of internal organs, and especially disorder of the digestion, has a good deal to do with its appearance. We have, further, the authority of Hebra for stating that during cholera epidemics at Vienna, about 1 per cent. of the patients, as convalescence approached, were attacked with erythema multiforme—the eruption, however, generally remaining limited to the first stage, that of erythema papulatum. This is the so-called roseola cholerica.

If the salient features of erythema multiforme are kept in view, it is hardly possible to mistake it for any other affection.

8. **Erythema nodosum** (*Dermatitis contusiformis*).—This eruption has a special tendency to attack the front of the legs, and, next to this, the arms, although it may be seated upon any part. It appears in the shape of oval or rounded tumours, varying in size from that of a pea to a hen's egg, whose long diameters are generally parallel to the axis of the limb. They are not much elevated, and feel as if deeply seated. At first they are firm to the touch, painful upon pressure, and of a rosy tint, the colour disappearing upon pressure; in a later stage they are soft and less sensitive, redness gives place to lividity, and, finally, a yellow tinge is imparted to them, which does not disappear on pressure. Occasionally, when the inflammatory action runs high, the tumours become hæmorrhagic. The number of tumours varies a good deal, but generally not more than ten or twelve appear on one limb at a time. The duration of the eruption is usually from two to four weeks, but it may be kept up indefinitely owing to the occurrence of successive crops; and, in that case, the new swellings never occupy the sites of the old ones. It is especially apt to occur in young persons under 30 years of age, and females are more liable to be attacked than males. The disease sets in with febrile symptoms, often accompanied by pains in the joints, which recur with each successive crop, and sometimes it makes its appearance during the course of rheumatic fever, which seems to imply a close connection with the rheumatic diathesis. Like erythema multiforme, the eruption has a tendency to appear in spring and autumn, and it may be an annual visitor.

Hebra was of opinion that, in some cases, the disease is connected with inflammation of the lymphatics, seeing that the little tumours are arranged along their course, thus exhibiting appearances similar to those of angioleucitis. But in the latter the tumours tend to terminate in suppuration, while those of erythema nodosum never do. Hebra's hypothesis, moreover, has never been verified by *post-mortem* examination, so that his view must be taken with a reservation. Bohn, on the other hand, is of opinion that embolism of some of the blood-vessels of the skin is at the root of the mischief,—the little tumours, in fact, constituting inflammatory infarctions. The only diseases likely to be mistaken for erythema nodosum are urticaria nodosa and angioleucitis.

Erythema nodosum.	Urticaria nodosa.
1. Pains in joints common, and occasionally associated with rheumatic fever.	1. No joint affection.
2. Seats of predilection—the legs, and, next to this, the arms.	2. No special seat of predilection.
3. Colour first red, then violet, finally yellow.	3. Colour red throughout, but centres of patches pale.
4. Eruption painful, or at least tender on pressure in the advancing stage.	4. Eruption very itchy, and never painful unless as the result of scratching.
5. Duration of each crop of eruption, seven to ten days.	5. Duration, two or three days.

Erythema nodosum.	**Angioleucitis.**
1. Eruption symmetrical.	1. Unsymmetrical, only one limb being involved.
2. Often associated with rheumatic pains, and even sometimes with rheumatic fever.	2. Usually the result of a wound, abrasion, or the like.
3. No appearance of any connection between the individual tumours.	3. A red line, connecting the swellings, runs up the limb, sometimes having a cord-like feeling.
4. Suppuration rare, if ever.	4. Suppuration usual.

9. **Erythema induratum** * (*Erythème induré des scrofuleux of Bazin*).—This affection is exceedingly liable to be mistaken for erythema nodosum. It is met with in scrofulous subjects, the lower portions of the legs being specially liable to be attacked. It sets in without fever in the shape of indurated nodules or patches, which soon assume a violaceous colour, and which are little if at all tender on pressure. The borders of the plaques are ill defined, and they may coalesce forming pretty extensive indurations. Sometimes they are slowly absorbed, but they are apt to end in softening, sloughing, and ulceration. The latter resembles somewhat, and may be mistaken for, syphilitic ulcers. It is oftenest observed in girls and young women, especially washerwomen, and in those who have to stand a great deal. It is most commonly met with in winter. The following table gives the points of distinction between this affection and E. nodosum :—

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* See an excellent article by Dr. T. Colcott Fox, *Brit. Journ. of Derm.*, Aug., 1893, p. 225.

E. nodosum.	E. induratum.
1. Sets in with malaise and some fever.	1. Sets in without fever.
2. Pains in joints common, and occasionally associated with rheumatic fever.	2. Occurs in delicate and scrofulous subjects.
3. Nodules painful and tender on pressure in the early stages.	3. Pain and tenderness slight or absent.
4. Bright or dusky red, and, when subsiding, undergo the changes after a bruise.	4. Colour violaceous.
5. Duration of each crop a week or two.	5. Much more chronic, even months.
6. Eruption terminates in resolution.	6. Often terminates in softening and ulceration.

10. **Erythema læve** is the term applied to cases in which dropsy precedes and induces erythema, owing to the lowered vitality usually accompanying such a condition, and to the stagnation of the circulation. It is most frequently encountered upon the legs below the knees, because they are most commonly the seats of dropsy, and on account of their dependent position. It is not unusual for the erythema to pass on to eczema, and in some instances mortification sets in. But, while dropsy may give rise to erythema, erythema, on the other hand, may cause œdema, if the inflammatory action is high, especially if there is much loose cellular tissue at the part affected,—a condition which is sometimes spoken of as E. œdematosum.

11. **Erythema paratrimma** (*incipient bed-sore*).—This constitutes the first stage of bed-sores, and arises, as is well known, from the pressure to which certain parts—as the sacrum and trochanters—are subjected from long confinement to bed. It is further favoured by the lowered vitality of the system, associated with chronic and exhausting diseases, and, above all, by inflammation of the spinal cord, whereby the affected parts are in great measure cut off from the trophic influence of the nerve centres. It is very apt, if neglected, to terminate in gangrene. The characters of E. paratrimma do not differ from those of E. simplex, but, owing to its situation and the conditions under which it arises, there should be no difficulty as to the diagnosis.

12. **Erythema pernio** (*Chilblain*).—This form of erythema should be kept apart from that due to genuine frost-bite (congelatio), although they are closely allied pathologically. It is oftenest met with in anæmic persons, and in the subjects of the lymphatic temperament, and in children and old people, rather than in healthy, vigorous adults. It

is specially apt to occur in cold weather, and at parts far removed from the influence of the heart (fingers, toes, ears, nose, and cheeks), owing to the circulation at these parts being languid. At the very outset the capillary blood-vessels are in a state of contraction, and the affected parts are pale and numb. But this is soon followed by paralysis of the vaso-motor nerves, with consequent dilatation of the capillaries, and the parts become painful, swelled, and dusky red or livid. As the acuteness of the inflammatory action subsides, there is more or less itching and desquamation. In bad cases, and when neglected, the erythema may pass on to vesication and ulceration, or even to gangrene, although this is exceptional.

Chilblain affecting the nose and cheeks may be mistaken for *rosacea*, but the latter is not met with on any other part than the face; it is most apt to occur in middle life; there is a varicose condition of the small vessels of the skin preceding and accompanying the inflammation; the surface is not so livid, and it is, as a rule, less shiny and swollen.

Chilblain affecting the hands may readily be mistaken for *lupus erythematodes* of these parts—indeed, the two conditions are closely allied. The latter, however, is much more persistent, and is moreover rarely if ever seen on the hands, and on no other part. Generally the eruption will be found also in its accustomed sites, viz., nose, cheeks, lobes of ears, and head, when the typical characters of lupus erythematodes are usually to be distinguished. Not unfrequently, too, lupus erythematodes is accompanied by other manifestations of the strumous diathesis.

Treatment.—With regard to *erythema simplex* and its varieties, it must be remembered that it is closely allied to eczema, and is indeed a veritable eczema arrested in its first stage. Its parentage is the same, and its treatment must, therefore, be conducted on the same principle as we would treat eczema itself. But, as erythema represents a lower grade of inflammatory action, it is obvious that, as a rule, only the simpler and milder measures applicable to eczema are required for its eradication.

It may be remarked, however, that in *erythema capitis* the best results are often obtained, in addition to constitutional measures, from the application of a lotion of liquor carbonis detergens (℥i in ℥vj of distilled water), followed by an ointment containing ʒss to ʒi of sulphur to the ounce, or from one composed of—

℞ Lanolini anhydrici,
Cerati galeni, āā, ... ℥ss.
Resorcin,
Ichthyol,
Acidi salicylici, āā, ... 3%. —*M.*

In the treatment of *erythema faciei* we must guard against exposure to a hot sun or to cold winds, and it is a good thing to smear the surface before going out with a little of Pick's or Provan's paste,* or kristaline. The face should be washed as seldom as possible, and then with tepid rain water and a superfatted soap such as vinolia or molfa.

Erythema intertrigo is very easily dealt with if the general health is satisfactory. The parts may be washed with a solution of permanganate of potash (gr. x to the ℥i of distilled water), dried with a soft rag, and an absorbent powder applied.† Between times the opposed surfaces may be kept separate by means of small pieces of lint. The application of Unna's zinc or lead plaster, or his zinc ichthyol gelatine, is also very effective (see treatment of eczema).

In *erythema strophulus* we must mainly rely upon constitutional treatment. The general health must be carefully attended to, and all sources of irritation—teething, worms, constipation, indigestion, and errors of diet—removed. For the relief of the excessive itching the antipruritic lotions and ointments applicable to eczema may be used, but, as the eruption generally occurs in infants, the milder of these remedies should be preferred.

Erythema punctatum.—Such cases must be treated on the same principle as in the case of a mild febrile attack, any ascertained disorder of any of the internal organs being rectified. As a local application gentle inunction, night and morning, with warm camphorated oil, may be of use, or some emollient ointment. When it is borne in mind that this is generally a mild affection which runs a short and definite course, the inexpediency of very active treatment is apparent.

Roseola is a very mild affection which usually passes off speedily even without treatment. Attention to the general health, and especially to the state of the digestive organs, and the rectification of any derangement which may be present, usually suffices, and local treatment is seldom required.

Erythema circumscriptum.—We have here to deal with a simple erythematous inflammation consequent upon seborrhœa, so that, apart from careful attention to the general health, we must treat the disease on the same principle as we would deal with a seborrhœa. An

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* ℞	Tragacanthæ,	
	Glycerini (Price), āā,	ʒiv.
	Boracis,	ʒss.
	Aquæ destillatæ,	q. s.
	Fiat pasta.	

† ℞	Pulv. zinci oxidi,		
	,, lycopodii, āā,	℥ss.	
	Acidi salicylici,	3°/₀.	—*M.*

immense variety of local applications may be used with advantage, but it will be sufficient in this place to mention two or three. The patient's underclothing must be renewed frequently, and he should be specially warned against wearing the same flannels day and night continuously, as is so generally done in these cases. The body should be thoroughly washed with warm, soft water and soap (*e.g.*, Eichhoff's "resorcin-salicylic soap," or Hebra's "spiritus saponis alkalinus") once a day, and dried with a rough towel. A soothing ointment may then be well rubbed into the parts, the composition of which is indifferent. When the scales are quite gone, a lotion of carbolic acid (ʒij glycerine, ℥v rectified spirit, ℥ij distilled water to ℥vi), or of liquor carbonis detergens (℥i to ℥v of distilled water), may be applied before the ointment, or ointments containing sulphur, resorcin, ichthyol, salicylic acid, or tar* may be employed. Under this treatment the eruption rapidly disappears, but if the remedies are not continued for a long time afterwards, and the general health put in a satisfactory state, relapses are very apt to occur.

Pityriasis rosea.—A disease which, like this one, has a tendency towards spontaneous recovery, does not require very active treatment. Any derangement of the general health, of the digestive organs in particular, must be rectified in the usual way, and mild local applications, such as are useful in erythema simplex, may be employed. Gibert was in the habit of recommending alkaline lotions and sulphur baths; Vidal is in favour of the latter, after washing with tar soap, and Radcliffe Crocker lauds the application of calamine lotion with the addition of ten minims of liquor carbonis detergens to the ounce.

Erythema multiforme and nodosum.—In these cases irregularities of diet and derangements of digestion must be carefully inquired for and corrected, and if this does not succeed, and especially if the eruption occurs in the subjects of the rheumatic diathesis, anti-rheumatic remedies—*e.g.*, salicine in 20-grain doses every two hours—may be tried. In chronic relapsing cases, when the state of the digestive organs is satisfactory, arsenic may be given. Local applications may be resorted to in some cases, such as water dressings, or lotions containing Goulard's extract, or carbolic acid, in the proportion of a tablespoonful mixed with an ounce of glycerine and 10 ounces of distilled water. In erythema nodosum the recumbent posture is generally necessary, and the limbs may be raised upon pillows. In many instances treatment seems to be of little avail, and a spontaneous cure is a common result.

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* ℞ Sulphuris, ... ʒi.
Lanolini anhydrici,
Cerati Galeni, āā, ... ʒiij.
Glycerini (Price), ... ♏ xl.
—*M.*

Or, ℞ Resorcin,
Ichthyol,
Acidi salicylici, āā, ... 2 per cent.
Unguenti petrolei, ... ℥i.
—*M.*

Erythema induratum must be treated with tonics and anti-strumous remedies, along with rest, elevation of the limbs, and bandaging. If ulceration occurs the ulcers must be treated in accordance with the rules laid down under the head of *Ulcers.*

In *erythema læve* the primary disease, which has given rise to the œdema, demands our immediate attention. The recumbent posture is generally indispensable, and, if the lower extremities are involved, they must be kept elevated. The parts may be painted with zinc ichthyol gelatine after melting it, or some other soothing application may be used, and a carefully adjusted bandage is needful. Œdema secondary to erythematous inflammation indicates an acute process, and must be treated accordingly.

In *erythema paratrimma* (commencing bed-sore) we must carefully attend to the condition of which this inflammation is a complication, and do everything in our power to improve the general health. The exciting cause being the long-continued pressure of prominent parts upon the bed, we must necessarily try to obviate this by keeping the patient off the affected part, or by the use of an air cushion, the aperture of which corresponds with the inflamed skin, or by placing him upon a water-bed, so that the weight of the body is not concentrated upon any one part. As local applications, frequent washings with camphorated spirits of wine are to be recommended, or the application of glycerine of tannin, or a mixture of collodion and castor oil, or white of egg beat up with rectified spirit, or a drachm of sheet gutta-percha dissolved in an ounce of chloroform (Murchison). If the skin becomes abraided, the parts may be painted daily with nitrate of silver solution (gr. x to the ℥i), and then covered with zinc ichthyol gelatine. If sloughing occurs charcoal poultices sprinkled with powdered cinchona may be applied, or, as recommended by Dupuytren, pledgets of lint, soaked in lime juice, and sprinkled with a mixture of powdered cinchona and charcoal. After separation of the sloughs the ulceration may be treated with stimulating lotions, such as Hey's wash. In obstinate cases the continuous warm bath may be resorted to.

In *erythema pernio* (Chilblain) our object must be to accelerate the stagnant circulation. For this purpose the affected parts should be warmly, but not too tightly, clothed, and brisk walking exercise should be taken if the state of the feet permits of it. If cold feet are much complained of, the patient may be recommended, just before stepping into bed, to plunge them into cold water and then rub them dry with a rough towel, after which a hot bottle may be used. A great variety of stimulants has been employed, such as rubbing the effected parts with snow, comphorated oil, linimentum ammoniæ, or a mixture composed of equal parts of white of egg, spirits of turpentine, and distilled vinegar (Erasmus Wilson). Devergie advised the moistening of the parts with spirits of wine and then setting fire to it; while others apply sinapisms from time to time. Dr. Wallace, of Colchester, has found unbroken chilblains to disappear invariably within a few days by "dabbling on them a good lump of ordinary made mustard" every night before the fire, and rubbing it in until the part is quite dry and warm. These, and many other of a similar kind which need not be mentioned, are all recommended with the same object—viz., to stimulate the circulation of the part.

If, however, ulceration has occurred, warmth, elevation, and rest are required, and friction should be avoided. The ulcers must be treated, according to their nature, on the principles applicable to ulcers in general, but, if sluggish, a favourite remedy is equal parts of spirits of turpentine and resinous ointment. In all cases the general health requires careful attention; tonics are usually indicated, among which arsenic and quinine must be placed in the first rank; and digitalis may be tried if there are any signs of heart failure.

II. LICHEN TROPICUS.

(*Prickly heat.*)

This affection is termed lichen tropicus, because it is met with in tropical climates in its most typical form, although it is by no means limited to them, and it is closely allied to sudamina, already described (p. 90). In it there is congestion or slight inflammation at the orifices of the sudoriparous follicles; little, bright-red, acuminated papules, about the size of pin-heads, make their appearance in great numbers at these points, giving to the skin a rough feeling. They may be closely set together, but generally remain discrete, the intervening skin having a healthy appearance, though often bathed in perspiration. Here and there little vesicles, such as are observed in sudamina, often make their appearance, or some of the papules become converted into vesicles. This eruption, which is chiefly observed upon the trunk and upon the forehead where it is in contact with the hat, is accompanied by a tingling, prickling, or itching sensation, which may be very distressing and prevent sleep. It is aggravated by the use of stimulating food and drink, as well as by heat and overclothing. The rash, which may be followed by very slight desquamation, not unfrequently occurs in successive crops, so that the whole duration of the ailment is somewhat indefinite.

The **treatment** consists in endeavouring to keep the patient cool, and especially in avoiding overclothing, Frequent sponging of the skin with vinegar and water may be resorted to, and, if there is much irritation, a lotion of carbolic acid,[*] or one of the anti-pruritic remedies to be mentioned under the head of eczema, may be used. In some cases these applications may be followed with advantage by the use of a soothing dusting powder, such as emol, or equal parts of oxide of zinc, lycopodium, and starch, to which a little camphor may be added in the proportion of 10 grains to the ounce. At the same time the diet should be very light and unstimulating, as a rule; and saline aperients are often serviceable, as well as refrigerant diuretics (citrate or acetate of potash, &c.), and cooling acidulated drinks.

III. ECZEMA.

(Including its lichenous and impetiginous forms.)

Syn.—*Moist tetter—Dartre squameuse humide—Dartre vive* (Sauvages)—*Herpes squamosus madidans* (Alibert)—*Herpes miliaris—Ekzem—Nässende flechte—Salzfluss.*

The term eczema (which is derived from the Greek word ἐκζειν, to boil over) is applied to a chronic, more rarely acute, affection of the skin, of a non-contagious character, which, in the first stage, appears either in the form of erythema, vesicles, pustules, or papules, and is accompanied by more or less burning heat; while in the second, the heat having given place to itching, and infiltration of the skin being added, the reddened surface is either dry and scaly, or punctated and exuding, or more or less covered with crusts: in the declining stage the disease terminates in erythema.

There is no reason to doubt the truth of the view, promulgated by Tilbury Fox and Rindfleisch, that eczematous eruptions are analogues of catarrhal inflammation of the mucous membranes; that they constitute, in fact, catarrh of the skin. This is made apparent, not only from a consideration of the anatomical lesions observed in eczema and in catarrhal inflammations, but also from the tendency, which the subjects of the so-called eczematous diathesis have, to suffer from catarrh of the mucous membranes, especially of the respiratory and digestive tracts.

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[*] ℞ Acidi carbolici cryst., ... ʒij
Glycerini (Price), ... ʒvi.
Sp. rectificati,
Aquæ rosæ, āā, ... ℥iij. —*M.*

It is necessary to enter somewhat fully upon the consideration of this complaint, seeing that, in one or other of its protean forms, it is one of those diseases which are most frequently met with in practice, and unfortunately too often misunderstood; indeed, it may safely be affirmed that few persons pass through life without suffering from it in some measure. It is, with the exception perhaps of scabies, which has a tendency to spread through whole families, by far the most frequent of the diseases of the skin, if we are to place reliance upon the statistics of hospital and private practice, as shown by the annexed table.

From these statistics we find that of 26,851 cases of skin disease occurring in hospital practice there were 6,651 cases of eczema; and of 5,058 cases in private practice there were 1,639 of eczema; and, if we combine these statistics, we find that of 31,909 cases of skin disease there were 8,290 of eczema, or more than one in every four cases. But, while there can be no doubt that medical men are more frequently consulted for eczema than for any other cutaneous affection, these statistics cannot be said accurately to represent the relative frequency of the complaint, for patients often disregard skin diseases which do not cause much deformity or uneasiness, while they are pretty sure to seek relief from attacks of eczema, which generally give rise to both in a marked degree.

AUTHOR.	CASES OF SKIN DISEASES.		CASES OF ECZEMA.	
	Hospital Cases.	Private Cases.	Hospital Cases.	Private Cases.
*Erasmus Wilson, .	...	1,000	...	298
†Bulkley, ...	5,242	2,058	1,800	700
‡Devergie, ...	1,800	...	600	...
§Englested, . . .	9,809	...	1,724	...
M'Call Anderson, .	10,000	2,000	2,527	641

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[*] *An Inquiry into the Relative Frequency, the Duration, and Cause of Diseases of the Skin*, by Erasmus Wilson, F.R.S. London: Churchill, 1864.

[†] *Eczema and its Management*, p. 11, by L. D. Bulkley, A.M., M.D. London: Churchill, 1881.

[‡] *Traité Pratique des Maladies de la Peau*, par Alph. Devergie, ed. 2. Paris: Victor Masson, 1857.

[§] Quoted from Bulkley, *op. cit.*, p. 11.

Another reason for directing very special attention to this complaint is that—thanks especially to the labours of Hebra—our views with regard to its exact nature and surroundings have undergone many important changes, and, along with this, there has been a corresponding improvement in diagnosis and treatment.

The restricted meaning, which used to be given to the word eczema, arose no doubt from the classification of Willan and Bateman, in accordance with which the elementary lesion of eczema is, of necessity, a vesicle. Defective as any classification of skin diseases must of necessity be, there can be little doubt that the anatomical is the most objectionable of all, for in this way many dissimilar diseases are brought together under one group, while violence is done to the symptomatology of many of them, owing to the necessity of placing them under the heading of one of the elementary lesions. Thus, scabies is ranked with eczema and small-pox, diseases which have no connection with one another whatever, and the first of these (scabies), though it often shows itself in the pustular form, is still more commonly met with as a vesicular or papular eruption. There is no doubt in my mind that the best classification of skin diseases is one founded not on the elementary lesion, but, as far as possible in the present state of our knowledge, upon the nature of the affection.

It may be pretty confidently asserted that those who study this disease carefully at the bedside, and without bias, will arrive at the following conclusions:—

First. That the elementary lesion of eczema is not of necessity a vesicle.

Second. That it may be an erythematous state of the skin, a vesicle, a pustule, or a papule.

Third. That impetigo and lichen are merely varieties of eczema, in which the elementary lesions are pustules and papules respectively.

Fourth. That cases of eczema are often met with in which an erythematous state of the skin, vesicles, pustules, and papules, are met with in a combined form.

To this subject more particular attention will be directed, after reference has been made to the less variable symptoms.

Symptoms.—When an eczematous eruption is *at its height*, there are four symptoms, which are almost invariably present to a greater or less extent, namely:—

1. Infiltration of the skin.
2. Exudation on the surface of the skin.
3. Formation of crusts.
4. Burning heat or itching.

1. **Infiltration of the Skin.**—The infiltration is due to the transudation of the serous portion of the blood through the walls of the vessels into the meshes of the skin, and to the new formation of cells. It is upon the infiltration that the exudation on the surface of the skin, the itching, and the formation of crusts, to a great extent depend. Remove the infiltration, and the exudation and formation of crusts usually cease, and the itching is moderated, though it may not cease entirely. The infiltration is detected by pinching up a fold of the affected skin between the finger and thumb, and comparing it with a similar fold of a healthy part. The infiltrated fold is, cæteris paribus, much thicker than the healthy one, and the greater the thickness of the fold the greater the infiltration, and the more inveterate the affection. It has also a doughy feeling, especially if the infiltration be at all great, as compared with the elastic feeling of healthy tissue; and, on pressing an inflamed and infiltrated patch with the finger, the redness disappears for the moment, being replaced, however, by a yellowish colour, whereas on pressing a patch of simple erythema, in which, of course, scarcely any infiltration exists, the redness is replaced for a time by a healthy white colour. There is always more or less swelling of the affected part, which is principally due to the infiltration; but the swelling is not always in proportion to the amount of the infiltration, being more marked in those situations where there is much loose cellular tissue—beneath the eyes, for example. In some cases this infiltration into the subcutaneous tissue amounts to œdema, there being well-marked pitting on pressure (eczema œdematosum). This is most frequently observed in the lower extremities.

2. **Exudation on the Surface of the Skin.**—The exudation, "leeting" or "weeping," as it is often termed, may take place constantly, or principally when the circulation is excited, or the part exposed to friction, as when the patient scratches it. The observer must not, therefore, be led astray by the absence of exudation at the time the case is under inspection, but must always ask the patient if the eruption is ever moist. When it is a marked feature, the term eczema madidans is often applied to it. In a few cases of eczema, and particularly of the lichenous forms, there is little, if any, exudation, and consequently there are no crusts throughout the whole course of the disease (eczema siccum). From this it will be gathered that we cannot altogether agree with the statement of Tilbury Fox that eczema "will always furnish sufficient evidence in its history of the fact of its being a moist disease." * The exudation is often of a purulent nature, being then generally due to the rupture of pustules, but more frequently serous,

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* *Skin Diseases: their Description, Pathology, Diagnosis, and Treatment*, by Tilbury Fox, M.D. Ed. iii., p. 182. London: Renshaw, 1873.

resulting from the rupture of vesicles, or coming from the surface of excoriations, or from the bottom of fissures. It is occasionally mixed with blood in consequence of the presence of fissures, or of the laceration of the skin by the nails of the sufferer. It has the property of staining the underclothing with which it comes in contact, and of stiffening it as starch does. It must not be supposed, however, that there is anything peculiar in the chemical composition or microscopic appearances of the exudation, for it is identical with that which is extravasated in other forms of skin disease, such as the vesicles of herpes and the bullæ of pemphigus contain. It may be produced artificially by painting over the eczematous surface a solution of potash (say ʒss of potassa fusa to ℥i of water), which, acting as an irritant, not only produces a copious exudation on the surface of the skin, but likewise stimulates the capillary circulation of the part, and thereby favours absorption of the fluid infiltrated into the tissues. This must, therefore, be borne in mind in the treatment of infiltrated eczematous patches, and will be again referred to.

3. **Formation of Crusts.**—The crusts, being composed of hardened exudation and exfoliated epidermis, mingled frequently with sebaceous matter (especially when the eruption is on the head) and with particles of dirt, are more or less present on the surface of almost every exuding eczematous patch—their size and appearance depending upon the length of time during which they have existed, the quantity and quality of the exudation, and the habits of the patient as regards cleanliness. If the exudation is very profuse, instead of the crusts being large, there may be none at all, for in that case the fluid may run off the part before it has time to concrete. Or, if the patient is very cleanly in his habits, and the exuded matter is washed off repeatedly, or removed by means of daily poultices, or if the exudation is very slight, the crusts seen on the affected part at any given time may be very thin, and more like scales than crusts, or they may be wanting altogether. If the opposite holds, and the patient is negligent, the crusts may become very thick and adherent, owing to continual additions to their under surfaces from successive exudations. Not unfrequently cases are met with in which, though the eczema is quite cured, the crusts remain, owing to the negligence of the patient. This, for instance, is a common case:—A poor woman brings for advice her child, who has had an eruption on the head for years, and who has had nothing done for it. Lice probably wander about in all directions, and their nits (eggs) adhere to the hair in profusion, while scattered over the head large yellow or brown, thick, adherent, dry, and brittle scabs are detected. The nits are removed by combing and the use of spirit, the lice killed with staphisagria ointment, and the crusts removed by

means of poultices, and then healthy skin is found beneath. Crusts of this kind, which owe their existence to a past disease, are much drier and more brittle than recent ones, and, with a little experience, such cases can be recognised before the removal of the crusts. The size of the crusts is therefore no criterion of the severity of the disease, unless the patient is under one's own eye, and one sees the rapidity with which new crusts form after the removal of old ones.

Crusts due to the desiccation of purulent matter are usually thicker and rougher than those following upon the exudation of serous fluid. Those forming on hairy parts are, cæteris paribus, more apt to assume large dimensions than in situations not provided with hair, as they become glued to the hair, adhere very firmly, frequently cause much pain in the attempt to remove them, and are often concealed in great part by the hair itself. Their colour varies much: if the exudation is serous, the crusts have a greyish or brownish appearance; if purulent, as in the pustular variety of eczema, yellow; if blood is mixed with either of these, any shade of brown or black. These are the colours when the crusts are recently formed; but, when of old standing, they are altered, from admixture with particles of dust and other impurities.

4. **Burning Heat or Itching.**—When the patches of eruption are acutely inflamed, when there is much erysipelatoid swelling, or when there is a copious eruption of vesicles or pustules, burning heat is complained of, a symptom which must be taken into account as indicating the necessity for the use of soothing applications in the first instance. When the disease becomes chronic, the burning heat is replaced by itching, which may be of any degree, and constant or intermittent. It is always aggravated by touching the inflamed part, the slightest touch even sometimes giving rise to an irresistible desire to scratch. It gets troublesome when the circulation through the cutaneous capillaries is excited, as by the use of stimulating food or drink, or on getting warm in bed, thus preventing sleep. It is curious how patients seem to rejoice in the application of severe irritants, which relieve the itching at the expense of much pain, and how much positive pleasure they derive from scratching the part, often continuing to do so till blood flows freely, and the itchy sensation is replaced by pain from the laceration of the skin by the nails. Sometimes, along with the itching or instead of it, a distressing sense of formication is complained of—that is, a feeling as if numbers of insects were crawling over the skin. Often, independently of the scratching, pain predominates over the sensation of itching, owing to the presence of deep fissures. Scratching always aggravates the disease, and tends to bring out fresh crops of eruption. Patients know this very well, but cannot refrain from

indulging in a practice which, for the moment, gives relief. Often, in mild cases, where there is not much infiltration, the disease is kept up by the scratching alone, or by the baneful habit of frequently washing the parts with water; and in such cases, by allaying the itching and the desire to scratch by local sedatives alone, I have repeatedly effected a cure—so great a stimulus do the scratching and the use of water often give to the disease.

The elementary lesions met with in cases of eczema may now be studied at greater length. These vary much, as previously observed; hence they have been ranked second in importance to the infiltration, exudation, formation of crusts, and itching—four symptoms which are almost always present to a certain extent in a fully-developed eczema, or in some part of its course. By so doing, the observer is prevented from fixing his attention too much upon the former, and from being thus led away from the diagnosis of the case. The elementary lesion, however, is of great importance. This may be—

1. An erythematous state of skin.
2. A vesicle.
3. A pustule.
4. A papule, or a mixture of several or all of these lesions.

1. **The Elementary Lesion an Erythematous State of Skin** (*Eczema erythematosum*).—In this case the disease commences as a simple inflammatory redness of the surface, which is soon accompanied by exfoliation of the epidermis; but there is no infiltration of the skin at first, neither is there any exudation on its surface. In fact, the case is as yet not an eczema at all, but an erythema in the scaly stage, or pityriasis, as it is often termed. But, if the morbid process is not arrested at this stage, infiltration of the affected part gradually supervenes, and the disease is on the confines of a typical eczema. What have we now? We have patches of reddened, scaly, and infiltrated skin, described under the name of eczema squamosum by Hebra, who points out very correctly that this is identical with what is described in dermatological works as pityriasis rubra—a term which has been appropriated by Devergie,* and adopted by Hebra himself, for the designation of a very different affection.

It is much to be regretted, as I have already remarked, that Wilson applied the term psoriasis to this condition,† alphos being the name which he proposes for the disease at present known as psoriasis, for, without entering into the question of the appropriateness of the existing nomenclature of skin diseases, which in many cases few can defend, it must at once be apparent that to attempt to give a new meaning to a well-known term cannot but be fraught with disadvantage, and, in this case, lead to the belief that there is some connection between eczema and psoriasis—as these terms are at present understood—a mistake, illustrations of which I have already met with.

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* *Traité Pratique des Maladies de la Peau*, par Alph. Devergie. Ed. ii., p. 422.

† *The Student's Book of Cutaneous Medicine and Diseases of the Skin*, by Erasmus Wilson, F.R.S. London: Churchill & Sons. P. 99.

If the inflammation advances still further, serous exudation on the surface of the skin is superadded, which concretes into crusts, and we have then to deal with a typically infiltrated, exuding, and itchy eczematous eruption, covered more or less with crusts, and without, it may be, the vestige of a vesicle. We may thus regard eczema squamosum as the connecting link between a typical eczema erythematosum and a simple erythema. The eruption is now at its height, but, by-and-by, it begins to yield; the exudation diminishes and gradually ceases, the crust falls off, the infiltration disappears, and a simple erythema is left, as at the commencement of the process, with this exception, that the inflammation is not usually so marked. This, likewise, in a varying period of time vanishes, the erythema giving way to healthy skin, or to skin coloured more or less with pigment, as the result of the pre-existing inflammation, which in its turn gradually disappears.

The following case illustrates in some measure what has just been stated:—Wm. B., aged 42, weaver, was admitted at the Hospital for Skin Diseases (Glasgow), March 21, owing to the outbreak of an eczematous eruption, which had commenced two or three months previously near the left ankle, from which it had gradually extended till the above date, when it covered almost the whole of both legs and the inner aspect of the thighs, the knees, however, being unaffected. The elementary lesion was an erythematous state of skin, the infiltration was considerable, the exudation of serous fluid slight, and the itching excessive at times. The inguinal glands were enlarged from the irritation, and several furunculi were scattered here and there. On each arm, occupying the lower third of the upper arm and two-thirds of the forearm, a bright red, slightly elevated, rough and scaly patch of erythema was detected, which was very itchy, but without any infiltration of the skin, or exudation on its surface. It is not necessary to follow all the reports of this case, but it is interesting, as showing the identity in nature of the erythematous rash upon the arms and the eczematous eruption on the legs, to note that at one period the erythema of the arms changed its characters, and became converted into an exuding and infiltrated eczema, and that the same treatment, consisting principally of applications of a solution of black soap and tar, and the cold douche, which effected a cure of the typical eczema of those parts, removed also the patches of erythema of others.

In many instances, as we shall afterwards have occasion to mention, while the disease commences with an erythema, the above evolution is interfered with by the development, upon the erythematous ground, of one or more of the other elementary lesions enumerated at the commencement, as, for example, by a copious eruption of vesicles.

An eczematous eruption sometimes assumes an appearance which may be mentioned here, although the lesion at the commencement of the process is by no means of necessity an erythematous state of skin. In this variety there is usually not a vestige of either a vesicle, a pustule, or a papule (I speak now of the fully-developed eruption), but the skin is red, perfectly smooth on the surface, and brilliantly polished and shining in appearance, while the meshes of the deeper structures of the skin are loaded with infiltration. Every now and then this unhealthy cuticle exfoliates, leaving behind it a new layer as unhealthy as the one which preceded it. I have noticed this form of eczema especially often upon the legs, and not unfrequently upon the scrotum and ears. When the patient scratches the part, which is usually very itchy, excoriations occur and serum exudes, and often blood; and, if the scratching is much indulged in, the eruption of course loses the appearance above described, and becomes covered with crusts.

2. **The Elementary Lesion a Vesicle** (*Eczema vesiculosum*).—As before observed, a vesicle is held, by the followers of Willan, to be invariably the elementary lesion in cases of eczema—an idea which, I have no hesitation in saying, has been the foundation of more errors in diagnosis than any other in the whole range of dermatology, for while a vesicle is frequently, it is by no means always, nor even in the majority of cases, the elementary lesion. The vesicular form of eczema usually commences on an erythematous basis: upon this vesicles are developed, many of which may assume a pyogenic action, and be thus converted into pustules, in which case we have an assemblage of three elementary lesions, thus giving the lie to the anatomical classification. The vesicles are developed at the orifices of the cutaneous follicles, are small and closely set together, and usually rupture early, the serosity concreting into crusts. It is a very common occurrence for many of them to run together, separating the corneous from the mucous layer of the epidermis over a considerable extent. In these cases the corneous layer usually gives way quickly, so that the exudation has not time to be secreted to such an extent as to raise the cuticle much higher than the height of an ordinary vesicle; but, where the corneous layer is very thick, as on the soles of the feet and palms of the hands, it does not give way readily, the secretion of serum goes on increasing, and large

bullæ may be formed—a circumstance which requires to be borne in mind, else the observer may fall into errors of diagnosis which we shall refer to hereafter. Although the vesicles do not usually remain long intact, the vesicular stage may be kept up by the formation of successive crops of vesicles; but, even in this case, they usually disappear after infiltration of the skin becomes pronounced, and the disease thoroughly established. When the vesicular stage is gone, and the disease is at its height, it may be well to note carefully the appearance of the affected parts. The infiltrated patches are red and inflamed, but the redness is not uniform, the surface being studded with innumerable points of a deeper red, thus giving to the parts a remarkably punctated character, an appearance which, when well marked, serves to distinguish the eczematous eruption from all other diseases of the skin, and which Devergie claims to have been the first to describe. These points correspond to the orifices of the glands, like the vesicles which preceded them; they are owing to the congestion of the skin being more pronounced at the glandular orifices than elsewhere, and to the occurrence of minute excoriations, the result of rupture of the vesicles. It is principally from these that the serous fluid exudes, often in great abundance, which afterwards concretes into crusts. This stage of eczema corresponds to the eczema rubrum of some authors, the eczema madidans of others. Devergie points out that the punctated appearance, when not well marked, may be brought out more characteristically by rubbing firmly into the affected part a solution of carbonate of soda in water. From what has been said, then, it must be apparent that the symptoms of eczema erythematodes and eczema vesiculosum, when these are at their height, are almost identical, so that it is impossible, in many instances, from a mere inspection of the parts, to determine whether the disease commenced with an erythematous state of skin or with crops of vesicles.

3. **The Elementary Lesion a Pustule** (*Eczema pustulosum*).—This is the so-called impetigo of authors, a word which it is convenient to retain, as expressive of the pustular form of eczema. The pustular variety of eczema occurs oftenest in debilitated and strumous subjects, or when the eruption is situated on hairy parts (at the orifices of the hair follicles), as, for instance, on the head and chin, constituting cases of the so-called impetigo capitis and impetigo menti; but it is by no means limited to these situations. The pustules, like the vesicles, often form upon an erythematous ground; but, as before observed, their formation is sometimes secondary, vesicles being at first developed, the contents of which gradually change from serum into pus. The pustules are generally larger than the vesicles, and remain longer intact; otherwise, the pustular form of eczema runs

exactly the same course as the vesicular; and, when the pustular stage is gone, and the crusts removed, we observe the same punctated, exuding, itchy, and infiltrated patches, the description of which it is unnecessary to repeat. If we now turn to the very lucid description which has been given of impetigo by Willan and Bateman, we find the following remarks:—"In a few days the pustules break, and discharge their fluid; the surface becomes red and excoriated, shining as if it were stretched, but exhibiting numerous minute pores, from which a considerable ichorous discharge is poured out, accompanied with much troublesome itching, heat, and smarting."* These words apply equally to eczema vesiculosum when the vesicular stage is gone, and thus, out of the mouths of Willan and Bateman themselves, we are confirmed in the belief that eczema and impetigo are mere varieties of one and the same disease.

Physicians who follow in the footsteps of Willan, have not yet been induced to regard impetigo as a mere variety of eczema—a point which is generally conceded by both German and French dermatologists; but they are, as a rule, far too good observers not to have noticed a mixture of vesicles and pustules on many patches of eczema, a frequent transformation of vesicles into pustules, and a general resemblance between the two forms of disease; hence the origin and meaning of the term eczema impetiginodes.

It may be well in this place to refer to a form of eruption, previously classed with impetiginous eczema, and very carefully described under the name of *impetigo contagiosa* by Dr. Tilbury Fox, from whose description I draw largely in the few remarks which follow.† It is met with in all ranks of life, but most frequently amongst the children of the poorer classes. The eruption is ushered in by fever, which is generally slight, and is first seen upon the face, head, or hands. Vesicles make their appearance, which at first, at all events, are isolated; these, if not interfered with, "enlarge into flat bullæ," which become depressed in the centre, while, at the same time, the contents become turbid, and finally purulent. They are followed by crusts varying in size from that of a split-pea to a shilling, which are flat, straw-coloured, dry, and granular-looking, and appear as if "stuck on to the part." If removed little superficial sores are seen, which are usually covered with lymphy exudation, and, when they heal, erythematous spots are left which gradually fade. The scratching leads by inoculation to the spread of the eruption to other parts, the nape, buttocks, feet, &c., and not unfrequently the mucous membrane of the eyes and nostrils suffer in a similar manner. The complaint is decidedly contagious, and often spreads through whole families. There is no difficulty in curing it, which may be done by attention to the general health, and the application to the surface, after removal of the crusts, of a mildly stimulating ointment, such as an ointment of the ammonio-chloride of mercury (gr. v to the ℥i), or, as recommended by Dr. Zit of Prague, of a solution of perchloride of mercury (1 in 1,000).

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* *A Practical Synopsis of Cutaneous Diseases, according to the arrangement of Dr. Willan*, by Thomas Bateman, M.D. Ed. vii., p. 120. Edited by Anthony Todd Thomson, M.D. London: Longmans, 1829.

† *Skin Diseases: their Description, Pathology, Diagnosis, and Treatment*, by Tilbury Fox, M.D. Ed. iii., p. 224. London: Renshaw, 1873.

4. **The Elementary Lesion a Papule** (*Eczema papulosum*).—This form of eczema is often described as a separate disease under the name of lichen—a name which it is well to retain, as designating an eczema, the elementary lesion of which is a papule. But a careful study of this affection leads to the conclusion that it would be doing violence to the natural affinities of lichen to look upon it in any other light than as a mere variety of eczema. The eruption commences in the form of small, red papulæ, which may be isolated, and scattered here and there (the so-called lichen disseminatus), or confluent, forming elevated, rough, and furrowed patches of various shapes and sizes, in which, owing to the coalescence of the papules, the elementary lesion is sometimes difficult to establish, and all the more so as vesicles and pustules are not unfrequently developed during the course of the disease. The affected part is very itchy, and, as the patient scratches it incessantly, the symptoms are aggravated; infiltration of the skin becomes very marked, and exudation of serum, pure or mixed with pus or blood, may take place, which concretes into crusts. While many English and French writers describe lichen as a separate disease from eczema, few of them have failed to observe cases of the former in which the likeness to eczema was so great, that they have given to them the name of lichen eczematosus, or eczema lichenoïdes (synonymous with the term lichen agrius). But let us take a short description of this eruption from one of the standard authors. Hardy, for example, a most accurate observer, wrote of it thus:—"The skin becomes red, and upon this red surface small papules make their appearance, which become excoriated, and secrete a serous fluid in considerable abundance. Amongst these papules some vesicles of eczema are detected, which give way, and are followed by superficial ulcerations, from which serum exudes and concretes into crusts. From this mixture of vesicles and papules there results a state of parts which has as much the appearance of an eczema as of a lichen, and which throws great difficulty in the way of a correct diagnosis."*

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* *Leçons sur les Maladies de la Peau*, par le Docteur Hardy. Première partie. Ed. ii., p. 88.

Now, what have we here? We have a most accurate description of a typical exuding eczema, the only difference between it and the vesicular eczema of Willan being that the principal lesion is a solid elevation (a papule), instead of one filled with serosity (a vesicle). Indeed, Hardy admits as much when he says "the association of these two eruptions (lichen and eczema) is sometimes so intimate, that it is very difficult, if not impossible, to distinguish between them."* It seems pretty clear, therefore, that an eczema lichenoïdes is a true eczema, and not a separate disease; and that the dry lichen of authors is merely a less advanced stage of eczema lichenoïdes, and a counterpart of the dry, scaly stage of eczema erythematodes (see p. 20). The following case—and one meets with many such—shows that, under the influence of treatment, eczema lichenoïdes may assume all the characters of the typical dry lichen of authors:—

Catherine B., aged 14, was admitted at the Hospital for Skin Diseases, Glasgow, September 30, affected with eczema lichenoïdes of a year and a half's duration, occupying both popliteal spaces, and extending upwards for some way upon the posterior surfaces of the thighs. The patches were moist and distinctly papulated: considerable infiltration was detected; the itching was severe at times, and serous fluid exuded on scratching. There was an enlarged gland on the side of the neck. Cod-liver oil was prescribed internally; a solution of black soap was rubbed into the parts night and morning, and whenever the eruption was itchy; and the local cold douche was applied repeatedly. On October 10, ten days after the commencement of the treatment, the serous exudation had ceased, and the eruption now presented all the characters of a typical lichen as described in dermatological works. The patches were dry, rough, papulated, and the natural furrows of the skin greatly exaggerated. The infiltration of the skin and the itching, though moderated by the treatment, still continued.

But it may be said that lichen is occasionally a perfectly dry eruption throughout its whole course. Granted, although this is the exception to the rule; but it is merely because the inflammatory process has been arrested short of the exudation stage. Cases such as these must be put upon a par with cases of vesicular eczema in which the vesicles do not burst, but become shrivelled and dry up, and in which the eruption subsides without the occurrence of exudation; or with cases of eczema erythematodes which do not advance to the stage of exudation. It must be allowed, however, that in the lichenous varieties of eczema, exudation is more frequently wanting than in the vesicular; but this, combined with the fact of the elementary lesion being a solid elevation, instead of one containing serum, is not enough to constitute a separate disease, as the eruption otherwise follows essentially the same course, and is amenable to similar treatment.

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* *Idem*, p. 69.

In many cases of eczema, and especially when it occurs at parts where the skin is naturally thrown into folds, as the anus and angles of the mouth, or at parts which are constantly being put upon the stretch, as the palms and fingers, fissures are met with as a complication. When the skin is in a healthy condition, it stretches with ease when the parts are moved; but when an eczematous eruption is developed, its natural elasticity being gone, it gives way when put upon the stretch, thus giving rise to fissures, which are often deep and proportionately painful. Fissures, however, not unfrequently constitute the principal lesion, though they usually form upon an erythematous ground, as in the vesicular and pustular forms of eczema. The number of these varies much; there may be few, or, on the other hand, so many that they cross one another in all directions; and, although at first superficial, they have a tendency, as the disease becomes more chronic, to increase in depth, thereby causing great pain and some bleeding, especially on movement of the affected parts. I have taken the liberty of applying to this form of eczema, in which fissures constitute a prominent feature, the term *eczema rimosum* (from "rima," a fissure), which corresponds with the "eczema fendillé" of the French. A case of this form of eruption attacking the palm of the hand will be referred to when the treatment is discussed.

The nature of eczema rimosum may be more forcibly impressed upon the mind if the symptoms of "chapped hands" are considered, with which affection most people are too well acquainted. The skin is red, and superficial fissures occur, which take the direction of the natural furrows of the skin: if appropriate treatment is not adopted, the skin sometimes gradually assumes all the characters of a typical eczema rimosum, exhibiting an infiltrated, exuding, itchy, painful, and fissured surface.

In conclusion, it must be remarked that not only do the erythematous, vesicular, pustular, papular, and fissured varieties of eczema present analogous features when they are at their height, but they all terminate in an erythema.

To sum up what has been said with regard to the lesions observed in cases of eczema, the five following varieties of that disease may be enumerated:—

1. The principal elementary lesion an erythematous state of the skin (Eczema erythematosum).

2. The principal elementary lesion a vesicle—the typical eczema of Willan and Bateman (Eczema vesiculosum).

3. The principal elementary lesion a pustule—the typical impetigo of Willan and Bateman (Eczema pustulosum, or Eczema impetiginodes).

4. The principal elementary lesion a papule, including the lichen and eczema lichenoïdes of Willan and Bateman (Eczema papulosum).

5. The principal elementary lesion a fissure, the eczema fendillé of the French (Eczema rimosum).

These names—Eczema erythematosum, vesiculosum, pustulosum, papulosum, and rimosum—are of use in describing cases of eczema, as each expresses, in a word, that which otherwise would take a sentence to explain. But instances are seen, over and over again, of the predominence of one lesion on some, and of another on other, patches of eczema on the same person; and every one must have noticed cases in which, upon one patch, an erythematous state of the skin, vesicles, pustules, papules, and fissures were detected. To these the simple term eczema should be applied.

What can the school of Willan make of such cases!

It is necessary to observe that the symptoms of eczema, which have been described, have not been discussed in the precise order of their occurrence, as my endeavour has been to arrange them in such a way that the more prominent and least variable features of the disease may be more forcibly impressed upon the mind. Moreover, the symptoms vary much in the order of their manifestation: most usually one or other of the elementary lesions is developed first of all, which induces itching. To allay this, the patient scratches the part; it becomes more inflamed, the eruption breaks out more abundantly, infiltration of the affected part occurs, and this is followed by exudation on its surface, which finally concretes into crusts. In many instances, however, the itching seems to be the first manifestation; to allay this the patient scratches himself, and thereby calls forth the elementary lesions, the infiltration, exudation, &c., for we know well that scratching the healthy skin is quite capable of producing an eczematous eruption. Of this we have abundant evidence in cases of scabies, where an artificial eczema is often called forth by the scratching induced by the peregrinations of the itch-insect. But the order of occurrence of the various symptoms is of no great moment, so that it is unnecessary to dwell further upon this point.

The eruption is generally symmetrical; that is to say, it usually occurs on both sides of the body in the same situations, although often not to the same extent. Thus, if it is behind one ear, it is generally behind the other also; if behind one knee-joint, behind the other also, and so on. If the disease is fully developed, and not in the least degree symmetrical, it may with much probability be inferred, either that the eruption has been called out by local irritation merely, or that it is not an eczema at all.

Ulcers are sometimes met with in cases of eczema, but they do not constitute an essential feature, and must be regarded in the light of a complication. They occur most frequently on the legs, where, from the tendency to congestion of the parts—owing to their distance from the centre of the circulation, their dependent position, and frequent association with varicose veins—they may become very large and deep, and may assume any appearance, from the inflamed to the indolent. In other situations they are usually small and superficial, and more of the nature of excoriations than distinct ulcers; hence, as a rule, they leave no scars after the eruption disappears. Eczematous ulcers occasionally assume alarming dimensions, as in the following case:—

On May 11, 1861, I was sent for to the country, for the purpose of seeing a little girl, aged about 10, who had been suffering for about three months from a papulated eczematous eruption, principally affecting the back. When I saw her she was confined to the sofa, and at that time her whole back, from the neck to the hips, presented an uniform superficially ulcerated surface and a slightly papulated aspect: it had all the appearance of an ulcer from a burn which was gradually contracting, and cicatrisation proceeding inwards from the edges. At the margin, also, papules and vesicules containing opaque serum, were detected. Papules were likewise scattered thinly over the body, but especially on the brow. From the surface of the sore semi-purulent matter was exuding. The little girl had been able to run about till within a week of the above date, since which time she had been confined to the sofa. Her general health was, however, good, except that she had suffered a little from the confinement and from the irritation of the sore.

Dr. Robert Stewart, of Coatbridge, saw the patient along with me, and we agreed that the sore should be dressed with cod-liver oil, and Fowler's solution was administered in gradually increasing doses.

I am indebted to Dr. Stewart for acquainting me with the result of the treatment. In a letter, dated October 22, 1861, he wrote:—

"After you saw her, she commenced with two drops of Fowler's solution three times a day. Each dose was increased by a drop each day, so that latterly she was taking thirteen drops of Fowler's solution three times a day, which had the most charming effect, and produced a decided cure. Altogether, she must have taken, in the course of six or seven weeks, two and a half ounces of the solution. I saw her regularly, and there never was a bad symptom." Cases of this character and severity are of very rare occurrence.

The eruption is not unfrequently complicated with small abscesses and furunculi, which may occur on any part of the skin, and in persons of all ages. But the former are most commonly met with on the heads of young children, while the latter are most frequent and troublesome in the armpits, on the legs, and on the buttocks, especially in broken-down subjects.

Another frequent complication is enlargement of the glands in the neighbourhood of the eruption, and it is all the more important to refer to this, seeing that the glandular enlargement is often regarded as proof positive that the patient is the subject of the strumous taint, or is affected with syphilis. This is not the case, however, for it is generally due to the irritation set up by the adjacent eruption, though of course a smaller amount of irritation is capable of causing it in syphilitic or strumous persons. If the head is the seat of the disease, the glands at the back of the neck and behind the ears are often enlarged; if the legs, those of the groin are frequently affected, and so on.

In persons who are the subjects of the so-called eczematous diathesis in a marked degree, the skin has often a peculiar appearance, which is by no means limited to the parts which have been attacked, but may be observed over the greater portion of the cutaneous surface, and which is partly, but not entirely, due to the long-continued scratching in which they have indulged. It is much darker in tint than natural, owing to an increased deposit of pigment in the mucous layer of the epidermis; the natural lines and furrows of the skin are deeper and wider apart than in health, and there is more or less tendency to desquamation. The skin has thus a rough as well as dry feeling, and a coarse appearance, so that it much resembles, and indeed is often mistaken for, a mild form of ichthyosis.

Eczema may occur in the acute (eczema acutum), or in the chronic form (eczema chronicum). In typical cases of the former, which is the less frequent of the two, the patient exhibits symptoms similar to those which precede the development of a fever. His appetite is lost; he complains of nausea, and is disinclined for exertion, mental or physical; he feels chilly, and febrile symptoms set in, which are usually slight. In the case of young children the fever may be high, and even attended by delirium. The eruption comes out suddenly, and in rare cases implicates the greater portion of the body; but usually only a limited extent of surface is attacked, as the face or the hands and feet, and, as soon as the eruption is fairly out, the general symptoms disappear. The parts affected are acutely inflamed and very much swelled, and generally the seat of a copious eruption of vesicles or pustules, and the patient complains of burning heat. An acute attack of eczema may, under appropriate treatment, disappear in a week or ten days, or it may be prolonged by the occurrence of successive crops of eruption on the same, or on different parts of the body, or finally it may pass into the chronic form.

The latter is the variety which it usually assumes, and it is very extraordinary to observe how frequently a severe and extensive eruption, even in an infant, is apparently coincident with the most perfect general health and total absence of fever.

A number of names, many of them quite useless, have been coined to express various forms of eczema. Some of these have already been discussed—for example, eczema humidum, siccum, erythematosum, squamosum, vesiculosum, pustulosum, papulosum, rimosum, acutum, chronicum, &c.; but, with the exception of the local varieties which are referred to later on, there are very few others to which it is necessary to allude.

Eczema universale, in its literal sense, refers to cases in which the whole body is implicated, not a single portion of healthy skin being left, a condition which is very rarely met with; but the eruption is frequently diffused over a large extent of surface in the form of patches of various shapes and sizes (eczema diffusum).

Eczema nummulare is the name applied to the eruption when it forms small circular patches, like pieces of money. These vary a good deal in diameter, but are usually about the size of a crown-piece, and are oftenest situated upon the lower extremities. Devergie remarks that this is the most difficult to cure of all the forms of eczema—an observation which corresponds with one of Hebra, to the effect that the more limited the eruption the more difficult is it of cure. My own experience confirms these statements in part only, for, while I have found limited eruptions less under the influence of internal and of mild local treatment than those which are more generalised, I have also observed that they sometimes vanish with great rapidity under the use of more powerful external applications, which can be applied with perfect safety.

In some cases of chronic eczema in which the patches are of old standing, and particularly when they are seated on the lower extremities, the parts are remarkable for their dryness and hardness, and are very often the seats of great itching. They sometimes much resemble, indeed are often mistaken for, patches of psoriasis. Wilson proposes for this condition the term eczema sclerosum, and when, as occasionally happens, owing to hypertrophy of the papillæ, the parts assume a warty appearance and feeling, the appellation of eczema verrucosum.* This warty condition is most frequently met with in strumous subjects.

In Hebra's work on skin diseases, a morbid condition is described, to which he has given the name of eczema marginatum.† But, as this has now been proved to be a variety of ringworm, it will be referred to in the section upon that disease.

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* *The Student's Book of Cutaneous Medicine and Diseases of the Skin,* by Erasmus Wilson, F.R.S., p. 79. London: John Churchill & Sons. 1864.

† "On Diseases of the Skin," by Ferdinand Hebra, M.D. *New Syd. Soc. translation,* vol. ii., p. 112.

One other variety of eczema remains to be considered, to which the term *eczema infantile* has been applied. It is sometimes met with in several members of the same family, but more frequently one of the children is attacked. It usually commences within six months of birth, making its appearance first of all upon the head or face, whence it often spreads in patches to the trunk and extremities; but, if it continues for a length of time, it frequently leaves the head entirely. Although it is aggravated by teething and such like sources of irritation, it usually makes its appearance before the eruption of any of the teeth, and in children who, at the outset at all events, may apparently be in a state of the most perfect health. It is a very common affection, indeed the statistics of the Children's Hospital in Vienna show that it constitutes almost one half of all the skin diseases of childhood. According to Schiff the causes of this predisposition are—(1) The thinness of the epidermis, and, in consequence, the superficial position of the papillary bodies and the network of blood-vessels; (2) the excess of turgor of the infantile cutis in comparison to that of adults; and (3) the habitual hypersecretion of the infantile glands of the skin.* It is unnecessary to give any detailed description of it, because it may assume any of the forms already mentioned, although on the head its character is generally pustular. This, however, is in accordance with the rule that, in cases of eczema in which hairy parts are involved, the elementary lesion is generally a pustule.

Anatomical Lesions.—Until within a very recent period little was known of the changes which occur in attacks of eczema; and even what we now know, though interesting in itself, does not lead to any very brilliant practical result. Of late years this subject has been very carefully investigated by a good many observers, but, for the advances in our knowledge, we are in the main indebted to the labours of Simon, Wedl, Hebra, Neumann, Biesiadecki, and Rindfleisch.

Neumann rubbed croton oil into the ear of a living white rabbit for about fifteen minutes, and then watched the result for several hours with the aid of a low power of the microscope. At first he observed rhythmical contraction of the vessels, which was succeeded by a condition of permanent dilatation; the ear then lost its transparency and became hot and swollen, and in a few hours numerous vesicles made their appearance. In forty-eight hours, the rabbit having been killed, the tissues were found infiltrated with serous fluid and with an abundance of cells.† In the acute stage of eczema serous infiltration of the true skin is not so marked as that of the epidermis, so that, while there is little œdema of the former, there is a great tendency at this period to the formation of papules and vesicles.

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* *Wiener Med. Wochenschrift,* xiv. and xv.

† *Lehrbuch der Hautkrankheiten,* von Dr. Isidor Neumann, Docent an der K. K. Universität in Wien, 3e Auflage, p. 123. Wilhelm Braumüller, Wien, 1873.

The development of papules and vesicles has been carefully investigated by Biesiadecki and Rindfleisch.

The *papule* is formed thus:—The blood-vessels of the papillæ of a limited area—often those which surround a hair follicle—become congested; this is followed by an exudation of serous fluid and later on by the formation of cells; the connective tissue corpuscles of the papillæ are also increased in size and number, and become very succulent. The papillæ are enlarged both in a vertical and in a transverse direction. The epidermis is stretched over them, but not much altered, numerous spindle-shaped cells, derived from the connective tissue corpuscles, being found in the mucous, or even in the horny layer of the epidermis, while many have one extremity in the papillæ and the other in the mucous layer. In the latter they often form a dense network, within the meshes of which the slightly swollen and granular epithelial cells lie embedded. This circumscribed infiltration of the mucous layer of the epidermis and of the papillæ constitutes the eczematous papule.

If the serous infiltration of the papillæ and mucous layer increases, it accumulates between the mucous and horny layers, for the latter is firm and resistent, and a *vesicle* is formed. In passing through the rete mucosum the fluid pushes many of the cells before it. These, adhering below to the papillary layer, especially between the papillæ, are stretched into slender threads, dividing the vesicle into compartments. If the exudation is very copious, these trabeculæ are torn across and hang free from the roof of the vesicle. The fluid is at first clear, but later milky, from detachment of epithelial cells, and the development of pus corpuscles. If the latter are in great abundance the vesicle becomes a pustule. The red areola, often seen around the vesicle, is due to the pressure of the fluid upon the vessels beneath, driving the blood into the capillaries in the vicinity.

In some cases the congestion and dilatation of the vessels cease, the fluid is re-absorbed, and the cuticle which forms the roof of the vesicle exfoliates; in others the horny layer forming the upper wall of the vesicle gives way or is removed by scratching. The fluid previously occupying the vesicle now oozes out, and moist eczema (eczema humidum) is established, the minute red dots so often seen on an eczematous surface indicating the seats of the previous vesicles.

In the development of *pustules* the same changes are observed in the early stage as in the case of vesicles; but the papillæ are seen to be studded with numbers of young cells, which extend to the deepest part of the mucous layer, so that at the apices of the papillæ no line of demarcation between the true skin and the epidermis can be made out. These young cells approach the surface, and are set free as embryonic cells and pus corpuscles before there is time for their development into epithelial cells.* If eczema becomes chronic it is due to the persistence and intensity of the congestion of the papillary layer, and to excessive cell infiltration of the corium, which may extend to the subcutaneous cellular tissue, and surround, and even obliterate, the blood-vessels, their situation being marked by streaks of pigment, so that a veritable elephantiasis of the affected part may result. The papillæ become degenerated, and, being much enlarged, are distinctly visible to the eye, and often look like granulations. The skin, too, is darker than natural; it is much thickened; the lines and furrows being deeper, and it feels rough and has a coarse appearance. †

The most recent investigations of Neumann have also shown that in chronic eczema the lymphatics of the papillæ, as well as of the corium, are greatly elongated and dilated. ‡

Ætiology.—The disease under consideration may be dependent either upon constitutional or local causes, while in a large proportion of cases it is due to a combination of both. "We see an eczema," says Hebra,§ "on the hands and forearms of a young girl who has been engaged in washing soiled linen, and we declare that the origin of the eczema is in the action of the lye soap, hot water, and friction. Now, at the same time with this girl, there are many other females washing the same linen in the same lye, using the same soap, &c., without acquiring eczema. Indeed, this very girl who now has eczema, has for many years been exposed to the same influences without becoming affected. What is the general cause of her present susceptibility? A careful examination of her general condition will give the explanation. The girl, who before was healthy, robust, and regular in her menses, has now lost her appetite, has become sluggish, and languid, her appearance is pale and bloated, her menstruation is profuse; in a word, she has become chlorotic, and thereby eczematous. The remedies suitable for the chlorosis are now employed; the appetite and power of work return, the menses become regular, and the eczema disappears in spite of the continued washing and exposure to the influence of the agencies causing it. The same observation is made in reference to pregnant and nursing women; also in those suffering from chronic sexual disturbances. The latter must always be looked upon as favouring elements (a *momentum disponens,* or predisposing cause), which induce a *status minoris resistentiæ,* and allow an otherwise ordinary skin irritant to become an exciting cause, a *momentum excitans.*" But, while in the majority of instances both constitutional and local causes are concerned in the production of eczema, it not unfrequently happens that, by the time the patient comes under observation, the constitutional cause has disappeared, and the affection remains, owing to the skin having, so to speak, contracted a bad habit; in such cases a purely local treatment is sufficient for its removal.

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* "A Manual of Pathological Histology," by Dr. Eduard Rindfleisch, Professor of Pathological Anatomy in the University of Bonn. *New Syd. Soc. translation*, 1872, vol. i., p. 344.

† On Diseases of the Skin, including the Exanthemata," by Ferdinand Hebra, M.D. *New Syd. Soc. translation*, vol. ii., p. 124.

‡ *Zur Kenntniss der Lymphgefässe der haut des Menschen und der Säugethiere*, by Dr. Isidor Neumann, Wien, 1873, p. 28. Wilhelm Braumüller.

§ *Lehrbuch der Hautkrankheiten.* Zweite Auflage. Erlangen, 1874.

The chlorotic, the rachitic, the scrofulous, and the debilitated are very liable to be attacked, indeed it may be safely affirmed, that debility lies at the root of a great number of cases.

In a large proportion there is marked derangement of the digestive organs; but there is no doubt that this is sometimes due to the operation of the same causes as have produced the eruption, for we know well that the skin and mucous membranes are closely allied pathologically, as well as anatomically, and that the disappearance of dyspeptic symptoms often coincides with an aggravation of the cutaneous malady, and *vice versâ,* unless the causes of both are discovered and removed. On the other hand, it is equally certain that eczema is very frequently caused by digestive derangement, and in these dyspeptic cases, as Hebra has pointed out, the parts most frequently attacked are the face, lips, anus, and hands.

Improper, insufficient, or bad food, leading to a combination of digestive derangement and debility, is very apt to call it forth, the most familiar illustrations of which are to be met with in infants, whose mothers have a deficient or watery secretion of milk, or who insist upon nursing their children for eighteen months, or even for two or three years, and who at the same time give them "a little of what's going," such as "meat, potatoes, red herring, fried liver, bacon, pork, and even cheese and beer daily, and cakes, raw fruits, and trash of the most unwholesome quality."* From this it will appear that a too liberal diet and too stimulating food and drink, by deranging the digestive organs, may predispose to eczema, though certainly not so readily as a diet deficient in nutritive properties.

A fruitful source of eczema is deficient excretion. Hence we often meet with it in connection with constipation, and with defective elimination by the kidneys, especially that form in which uric acid is excreted in diminshed amount and accumulates in the blood. The influence of the gouty diathesis in favouring the development of eczema must not be overlooked—so much so, that, when the disease occurs in those who have suffered from typical attacks of the articular affection, there can generally be very little doubt that the eczema is gouty, and must be treated accordingly. We cannot tell from the appearance of the eruption that it is the appanage of the uric acid diathesis; but the more suddenly the outbreak takes place, especially if in the night-time, and the more decidedly it is aggravated under the influence of irregularities of diet and the excessive use of stimulants, the more likely is it to be gouty. At the same time there is good reason to conclude that in many cases such a connection only exists in the imagination of the observer, for which no sufficient grounds are to be found either in the antecedents of the patient or his relatives, or in the results of an anti-gouty treatment.

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* "A Series of Three Lectures on Rickets," by Sir William Jenner, Bart., M.D. *Medical Times and Gazette,* p. 460. 1860.

Amongst the predisposing causes must also be classed the rheumatic diathesis, for it frequently occurs in rheumatic persons, and in those who have a hereditary tendency to asthma. This has been much insisted on by Trousseau, who says—"Eczematous eruptions, rheumatism, gout, and hæmorrhoids, and I may add gravel, are complaints which may be replaced by asthma, and may replace it in turn. They are different expressions of one and the same diathesis."*

The connection between eczema and diabetes mellitus will be referred to hereafter, when we come to speak of eczema of the genital organs, as these are the parts most liable to be attacked in diabetic subjects.

In a certain number of cases the disease seems to be dependent upon nervous debility, as Wilson expressed it, for it is apt to occur in those whose nervous systems have been overtaxed, as, for example, by long-continued mental excitement, anxiety, grief, or over-study; but it must never be forgotten that the sedentary habits and constipation of bowels, so frequently associated with an over-strained nervous system, contribute their quota to the result. The following is a very good illustration of what has very appropriately been termed neurotic eczema, and is reported by Dr. Edward B. Gray:—"In 1864–65 an undergraduate, aged 20, consulted me occasionally on account of a moist eczema shifting about the forehead, but showing a preference for one or other supra-orbital region. I could never find anything wrong in his general health or habits. After repeated improvement and relapses the eruption finally got well, having lasted in all some eighteen months. I thought little of the case at the time, except so far as it baffled my efforts to cure it. I have thought much of it since, on account of the patient's remarkable personal and family history, which has latterly become known to me bit by bit.

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* "Lectures on Clinical Medicine," by A. Trousseau. *New Syd. Soc. translation*, vol. i., p. 641, 1868. The same remark applies to bronchitis.

"His eczema supervened slowly on the subsidence of spasmodic asthma, which had troubled him very frequently from early boyhood. For the first twelve years of his life he had pretty constant nocturnal incontinence of urine. He is now in perfect health, with one exception —that when overtired or worried he gets rather severe clavus-headache on one side.

"So much for his own medical history; now for that of his family. A brother stammered badly from childhood up to twenty-three or twenty-four years of age. A sister, till past puberty, was martyr to severe spasmodic asthma; after the subsidence of the asthma she had from time to time, for many years, a rough scaly condition of the skin of the face (chiefly the forehead), and occasional gastralgia of unquestionable neuralgic type. His mother, now advanced in years, suffers at times from infra-orbital and parietal neuralgia, culminating in a sort of erysipelatous inflammation of the skin of the affected parts. His paternal uncle was all his life an imbecile, and died between sixty and seventy of general paralysis.

"The sequence of events in this patient's case, read in the light of his family history, makes it to my mind in the highest degree probable that this frontal eczema, supervening on asthma, was simply a 'transmutation of neurosis' (Trousseau) from his vagus to his trigeminus nerve."

Hebra is of opinion that eczema is in no sense hereditary;* but I must confess that this statement is at variance with my own experience, for I have met with so many instances of parents and their offspring being affected as to be unaccountable on the mere supposition of their being coincidences. At the same time, it must be admitted that this cause does not come into play in the majority of cases, so that eczema cannot be cited as a good illustration of a hereditary disease. Devergie says that eczema is not strictly speaking hereditary, but only the constitution which favours the development of an eczema. This, however, is a distinction without much difference.†

Eczema is met with at all periods of life, but occurs most frequently in children—indeed, nearly one-fourth of all cases occur under five years of age.

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[*] *Handbuch der Speciellen Pathologie und Therapie.* Dritter Band, Dritte Lieferung, p. 384. Erlangen: Ferdinand Enke. 1864.

[†] *Traité Pratique des Maladies de la Peau,* par Alph. Devergie. Ed. ii., p. 246. Paris: Victor Masson. 1857.

There is a very general belief that it is more frequently observed in females than in males. This, however, is not the case, for of 2,500 cases observed by Bulkley, there were 1,288 males to 1,212 females;* of 298 consecutive cases which occurred in Erasmus Wilson's private practice, 171 were males and 127 females;† of 500 consecutive cases treated by me at the Hospital for Skin Diseases, Glasgow, 296 were males and 204 females, and of 293 private cases, 184 were males, and 109 females; while of 6,000 cases treated by Hebra, none of the patients, however, being under four years of age, 4,000 were males and only 2,000 females.‡ And, if we add together these figures, we find that, of 9,591 cases of eczema, 5,939 males and only 3,652 females were attacked.

In females the disease sometimes coincides with, and is apparently dependent upon, chlorosis, or upon derangement of the uterus or its appendages, when it has a special tendency to involve the face or scalp (Hebra); and it not unfrequently happens that its occurrence is favoured by pregnancy, in which case the hands, the feet, and the neighbourhood of the genital organs are the parts most frequently attacked. So uniformly does this occur on the hands of some females when they become pregnant, that they can tell more certainly that they are so by the appearance of the eczematous eruption than by the cessation of the menstrual discharge (Hebra).

Other forms of internal irritation may call forth an eczematous eruption, especially in those who are so predisposed, such as the irritation of ascarides or tapeworm, stricture of the urethra, dentition, &c. While probably the last of these is incapable of itself of producing an attack, I have no doubt that it favours its occurrence in those who are predisposed, and it certainly renders it less amenable to treatment while it lasts.

Certain internal medicines may give rise to it—*e.g.*, copaiva and turpentine, producing erythema, which, by scratching, may advance to eczema. The internal administration of arsenic in those who are subject to it, and especially when digestive derangement is present, often aggravates existing attacks, while the poisonous ingredients in the blood in cases of jaundice sometimes cause intolerable itching, and the scratching thus occasioned may call forth an eczematous eruption.

There can be no doubt also that the local inflammatory action and febrile disturbance set up by vaccination is frequently the occasion of an attack of eczema, in those who are predisposed thereto, which may commence at the site of the vaccine vesicles, or at some distant part. It must not be supposed, however, that I agree with the opinion that eczema is produced by vaccination, for the latter merely determines an outbreak which would probably have occurred at anyrate, though not perhaps at that particular time; in fact it plays the same part as measles, scarlatina, or any of the other specific fevers, which are frequently followed by eczematous eruptions. And curiously enough, as we shall see later, vaccination has occasionally proved a therapeutic measure of much value in the treatment of obstinate cases of chronic eczema.

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* *Eczema and its Management*, by L. Duncan Bulkley, A.M., M.D. London: J. & A. Churchill. 1801. P. 12.

† *An Inquiry into the Relative Frequency, the Duration, and Cause of Diseases of the Skin*, by Erasmus Wilson, F.R.S. London: John Churchill & Sons. 1864.

‡ *Handbuch der Speciellen Pathologie und Therapie.* Dritter Band, Dritte Lieferung. Erlangen: Ferdinand Enke. 1864.

The seasons exercise a material influence upon the development of the disease, as may be implied from the fact that its occurrence is favoured by a chill, by sudden alternations of heat and cold, and by exposure to great heat or to extreme cold. Most persons, at some period or another, in very cold weather, must have observed that their hands or other parts were red and excessively itchy. This is the result of the cold, which produces cutaneous congestion, and which, under unfavourable circumstances, may lead either to chilblains or to eczema. The heat of the sun, too, often produces eczema on the exposed parts of the skin (hence the term "eczema solare"), while that eczematous tendency, known as the "prickly heat" (lichen tropicus) of warm climates, is induced by the great heat and consequent perspiration independently of the sun's rays, and is therefore observed on all parts of the body.

The prolonged application of fomentations, poultices, and water-dressings covered with oil-silk, as well as the use of hot and mineral baths, though often beneficial in moderation, sometimes calls out or aggravates an existing attack of the disease. Its occurrence is also favoured by working so as to heat the body much, and produce perspiration, especially on those parts which are in contact with one another (eczema intertrigo). It is well known, too, that eczematous eruptions are exceedingly apt to be aggravated by a residence at the coast, sea air and sea water acting as irritants to sensitive skins; and, as patients often resort to the seaside in such cases, in the hope of benefiting from the change, it is most important to bear this circumstance in mind.

Those whose calling exposes the skin to acrid substances, to the long continued action of water, or to great heat, are often attacked on uncovered parts, especially on the hands—*e.g.*, grocers (hence the term "grocer's itch," induced by the irritation of particles of sugar, &c.), bakers (hence the term "baker's itch"), bricklayers (hence the term "bricklayer's itch," induced by the action of lime), washerwomen (hence the term "washerwomen's itch"), cooks, and smiths. A varicose condition of the veins, keeping up a constant hyperæmia of the parts, such as we meet with most frequently on the legs and about the anus, is a powerful predisposing cause; so also are tumours pressing upon the trunks of veins, and producing congestion of those parts from which the ramifications of the trunk are derived. It is in this way that uterine tumours, masses of impacted fæces, &c., predispose to eczema of the lower extremities, the genital organs, and anus.

Other forms of local irritation may likewise produce it, as the friction of coarse flannel underclothing, the pressure of the hat upon the brow, which at the same time heats the parts and confines the perspiration, the pressure of instruments and tools used by workmen—*e.g.*, the pressure of the spade on the palm of the hand—the use of ear-rings, garters, and trusses.

The application of stimulating liniments may call it forth, as croton oil liniment; ointments, as antimonial ointment; blisters, caustic alkalies, acids, sulphur, and mercury (hence the term "eczema mercuriale"). It may be well in this place to call attention to the fact that eczema mercuriale differs, not in appearance, but only in cause, from other forms of the disease, and that the commonly-received opinion that it may arise from the internal administration, as well as from the external application of mercury, is in my opinion quite incorrect.

The disease is not unfrequently induced by the action upon the skin of parasitic fungi, and of animal parasites—*e.g.*, lice, fleas, bugs, and lastly, and most important of all, the itch-insect—for almost all aggravated cases of scabies are complicated more or less with eczematous eruptions. This is owing to the scratching which the irritation of these parasites induces, and is a fruitful source of errors in diagnosis.

The irritation of the razor, especially when blunt, and irritating discharges from the genito-urinary organs, anus, meatus auditorius, nostrils, and mouth, are common causes of eczema. A peculiar-looking form of eczema, around the mouth of a child four years of age, induced by salivation which had existed since it was eighteen months old, and for which no cause could be assigned, unless dentition, recently came under my notice. The eruption had such a brilliantly red appearance that the saliva running over it looked almost like arterial blood. There was also an erythematous eruption on the left wrist, and a crusted eczematous patch on the right, induced by rubbing the eruption on the face with these parts.

The irritation of poisonous dyes employed in the colouring of articles of clothing is a much more frequent cause of eczema than is generally supposed. On Tuesday, September 29, 1868, before Mr. Alderman Dakin, at Guildhall, Mr. Webber made an announcement with regard to a poisonous dye used in some of the coloured socks in the market, which is apt to give rise to a variety of eczema of the feet. The socks alluded to were of brilliant colours, and Mr. William Crookes stated in the *Times* (October 16, 1868) that all the colours complained of contained one ingredient in common—a brilliant and fast orange dye (the various shades of colour being the result of mixture of this with other colour), which is one of the aniline orange dyes recently introduced into commerce. It possesses acid properties, but is soluble in alkalies, and Mr. Crookes is of opinion that the reason why most persons wearing such socks escape is that the normal perspiration is acid, and that it is only when the perspiration becomes alkaline from some cause or another that the dye is dissolved, and acts as an irritant. The escape of some persons, however, is no doubt due to their possessing less sensitive skins, which are thus not so readily acted upon by irritants, for it must always be borne in mind that the requisite amount of irritation capable of producing eczema varies in different persons, and in the same person at different times. Cases thus induced frequently come under the notice of physicians; but if the cause is appreciated and removed, the disease speedily yields to treatment.

I have known patients affected by sleeping with those who were labouring under the disease; but I quite agree with Wilson in the opinion that this is often owing to the discharge from the eczematous eruption acting as an irritant to the skin of the healthy person, though not always, for the cause is to be looked for, not unfrequently, in their being exposed to the same predisposing and exciting causes, as bad food, unwholesome dwellings, pediculi, &c. The only form of eczema which is undoubtedly contagious is that which has been previously described (see p. 124) under the name of impetigo contagiosa.

The **diagnosis** of most cases of eczema is by no means difficult, if those symptoms, which have been enumerated as being the most prominent and least variable, are borne in mind. The itching, the infiltration, the exudation, the formation of crusts, the punctated appearance of the exuding surface, and the gradual shading off of the eruption into the healthy skin, are features which, though not invariably present, should be always kept in view when examining a supposed eczematous eruption with a view to its diagnosis. It must also be remembered that vesicles are by no means essential, but that the principal elementary lesion may be either an erythematous state of the skin, a vesicle, a pustule, a papule, or a fissure, and that there is often a mixture of several or of all of these lesions on an eczematous surface. It will be apparent, from what has been said with regard to the constitutional symptoms and causes of eczema, that the state of the system generally, however much it may guide us in treatment, affords in general a very small clue indeed to the diagnosis of the disease, and we must consequently rely almost solely upon its local manifestations, and upon its situation, of which more will be said hereafter, especially in connection with its local varieties.

There can be no doubt that very many cases are diagnosed incorrectly, from confining the examination to one or two patches of the eruption, when, by exposing a larger surface, quite a different picture of the disease would be obtained. I think it of great importance, therefore, in the diagnosis of all cutaneous affections, to see the whole, or as much as possible, of the skin, even although the patient says there is no eruption except where he has indicated, as I have often found such statements to be either knowingly or unwittingly wrong.

Erythema can never be mistaken for it, if the meaning of the word is understood, and if the fact is kept in view that it is merely the first stage of an eczema, particularly of that form of it described as eczema erythematodes, and that most eczematous eruptions terminate in an erythema. We must, therefore, be prepared to find patches of erythema mingled with patches of typical eczema in cases of this disease.

Erythema is distinguished from eczema by exhibiting itself in the form of simple redness of the skin, accompanied, in the second stage, by exfoliation of the epidermis (pityriasis), by the itching being usually more moderate, by the total absence of exudation on the surface of the skin, of vesicles, papules, pustules, fissures, and crusts.

I have known it mistaken for *Erysipelas*, an error which should rarely be committed, as the two diseases differ from one another in very many important respects. Thus, in erysipelas the disease tends to creep rapidly over the skin, and continuously to invade new surfaces; the face and the lower extremities are the parts oftenest attacked; the redness of the skin is uniform, not punctated as in eczema; the edge of the eruption is abrupt and, in the advancing stage, elevated, and the swelling is often great. Again, while bullæ occasionally form on the erysipelatous ground, neither vesicles, papules, nor pustules are to be seen; there is no exudation on the surface of the skin (except from the rupture of bullæ), and burning heat, pain, and tension are invariably complained of in the earlier stages, rather than itching, which is only felt in the stage of desquamation. Lastly, erysipelas is usually an acute affection, which runs its course in a week or two, being preceded and accompanied by fever of a low type.

Some of the varieties of *Herpes* (I do not allude to herpes zoster, which can never be taken for it) may be mistaken for the vesicular form of eczema; but in the former the vesicles, which are arranged in clusters, and usually seated on the face, especially on and near the lips, or on the prepuce, are much larger, remain intact much longer, run their course in a few days, are not replaced by fresh crops, are not accompanied by infiltration of the skin to any extent, and itching is almost completely absent (at first, at all events), being replaced by a sensation of burning heat.

The affection which is most liable to be mistaken for it, however, is *Scabies* (the itch)—the disease due to the presence of the *acarus scabiei;* not a recent case, however, but a chronic one which, owing to the long-continued and severe scratching, is complicated with eczematous eruptions. If the case is one of scabies, there is usually a history of the disease being communicated by contagion, and, as far as my experience goes, persons, and particularly children, sleeping in the same bed with the patient for any length of time are sure to be affected. Then we find in most cases, on different parts of the skin, but most readily about the hands or wrists, the little canals which the female acari make in the skin, the recent ones containing the acarus and its eggs in various stages of development. On scraping the garments, which the patient wears next the skin, and placing the débris on a glass slide, portions of acari may sometimes be detected with the microscope. The above symptoms, when present, are conclusive as to the case being one of scabies. But the seat and character of the eruptions in scabies sometimes serve of themselves to clear up the diagnosis. Eruptions on the nipples of the female, and the penis of the male, between the fingers, or at the umbilicus, are always very suspicious, and so is a pruriginoid eruption,* which is most abundant on the lower part of the abdomen, the inner aspect of the thighs, and the front of the forearms. If ecthymatous pustules on the hands, feet, and hips are also present, the case is almost certainly one of scabies. But one must be careful not to be led into error by looking upon patches of eczema of the hands as proof positive of the presence of the itch-insect, unless several of the above symptoms are present also, as simple eczema often attacks, and is limited to these parts. In doubtful cases, we should treat the patient as if he were labouring under scabies at first, when the itching will be at once moderated if it is a case of the kind, and generally aggravated if it is one of eczema. But, although the itching does not entirely disappear under the use of balsam of Peru or the like, we must not conclude too quickly that it

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[*] By a pruriginoid eruption I mean an eruption resembling somewhat that seen in prurigo, and produced by the nails of the patient in scratching.

is not a case of scabies, for the treatment may not have been efficiently carried out; and, even if it has been, the eczematous eruptions which have been called forth by the scratching in a case of scabies, and aggravated by the treatment, may be a source of itching long after the acari have been killed. Cases, therefore, of scabies, complicated with eczematous eruptions, are very liable to be mistaken for eczema; but, if we are on our guard, the error is not likely to occur, unless there is no history of contagion, and unless we fail to detect the furrows of the acari or the insect itself.

A typical case of *Psoriasis* can never be mistaken for a typical case of eczema; but, when the silvery scales have fallen from the patches of the former, they may be mistaken for patches of dry or chronic eczema —that form of eczema which I have previously alluded to under the name of eczema siccum or squamosum, especially if the disease is situated on the head. And this mistake is all the more likely to occur, if a diagnosis is made after an examination of that part of the skin only, which the patient selects for exhibition, and if no inquiry is instituted as to the course of the eruption. On examination of all the other parts of the affected skin, in cases of difficulty, there will generally be found some characteristic patches, which at once clear up the doubt. In psoriasis the edges of the patches are abrupt, while in eczema there is a more gradual transition from the morbid to the healthy skin, and, while the former heals from the centre, the latter heals from the circumference. The scales on eczematous patches are thin and loosely attached, and only occasionally silvery-white; those of psoriasis are thick, very adherent, and silvery. Again, in eczema the tint of the patch is usually brighter, and the itching, as a rule, more marked; while the eruption has little tendency to attack the extensor, but on the contrary the flexor, surfaces, especially of the elbows and knees, a point which is of great value in arriving at a correct diagnosis. Then psoriasis is a dry eruption throughout, whereas an exudation on the surface of the skin is one of the most characteristic symptoms of eczema, and is generally present at some period of its course, and that punctated appearance of the skin which, when present, is so characteristic of eczema, is altogether wanting in psoriasis. Further, the general health of patients affected with psoriasis is generally good, while eczema very frequently attacks debilitated persons; and, lastly, psoriasis is much more apt to relapse, and is more rebellious to treatment, circumstances which, in doubtful cases, may help to conform or upset the diagnosis.

Pemphigus foliaceus may be mistaken for eczema, and indeed some dermatologists hold that it is not a variety of pemphigus at all, but of eczema, an opinion in which I cannot coincide. In pemphigus foliaceus the eruption has a tendency to commence on the front of the chest; when fully developed it covers the whole body, without leaving any intervals of sound skin; it is almost always fatal; bullæ are usually to be detected at some period of the disease; the infiltration of the skin is not great; itching is not usually excessive; the scales and crusts are very large. In eczema, on the other hand, the eruption has no particular tendency to commence on the front of the chest; it never covers the whole body without leaving intervals of sound skin; it is never fatal; bullæ are not to be detected except in a few cases, and then on the soles and palms only, owing to the thick cuticle preventing the bursting of the vesicles; the infiltration of the skin is often great, the itching excessive, and the scales and crusts are not so large as in pemphigus foliaceus.

The disease first described by Devergie as *pityriasis rubra*,* and later by Hebra,† may be taken for eczema; and, like pemphigus foliaceus, is regarded by some as a variety of that disease. I have seen a good many cases of this rare affection, one of which is carefully recorded by the late Dr. M'Ghie,‡ and the points which are most characteristic of it, in my opinion, as distinguishing it from eczema, are—the uniform redness of the eruption terminating abruptly at the edges, but gradually extending till the entire cutaneous envelope is involved; the exfoliation of epidermic scales, which are easily detached, the masses separated being often very large (even several inches in diameter), and so numerous that a basketful may be removed in the morning; the burning heat; the comparatively slight itching; the absence of infiltration and exudation to any extent, and the complete absence of that punctated appearance of the skin so often met with in eczema, and of vesicles, pustules, or papules.

That rare form of skin disease first described by Hebra, and referred to later on, under the name of *lichen ruber*, presents many symptoms in common with the papular form of eczema. In lichen ruber, however, the eruption consists of papulæ only, and in no case do we meet with either vesicles or pustules. Then again, when the eruption becomes confluent, while there is redness and infiltration of the skin and epithelial desquamation, as in cases of eczema, there is no exudation whatever, nor formation of crusts, and the itching is only slight. And, lastly, when fully developed, the eruption covers the body, without leaving the smallest interval of sound skin, and it is often fatal in the long-run, death being preceded by marasmus. These are almost unknown occurrences in cases of true eczema.

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* *Traité Pratique des Maladies de la Peau.* Ed. ii., p. 442.

† *Handbuch der Speciellen Pathologie und Therapie. Dritter Band. Acute Exantheme und Hautkrankheiten,* Von Hebra. Zweites Heft, p. 321. Erlargen, 1862.

‡ *Glasgow Med. Journ.*, January, 1858, p. 421.

Some forms of *syphilitic eruption,* and more especially the so-called eczema syphiliticum (which merely means a syphilitic eruption which resembles eczema), may be mistaken for non-syphilitic eczema. But in the diagnosis of the syphilitic affection we are assisted by the history of the case, such as the occurrence of the eruption after the contraction of an infecting chancre, which was accompanied by induration of the glands in the neighbourhood, and by its coincidence with other manifestations of syphilis, as engorgement of the posterior cervical glands, nocturnal headache and rheumatism, ulceration of the mucous membrane of the mouth, tongue, and fauces, falling out of the hair, gummy tumours, nodes, &c. In addition to this, several forms of eruption are often noticed at one time on the skin in the syphilitic disease, as lichen, roseola, condylomata, &c.

But all these symptoms may be present, although the eczematous eruption is not syphilitic, for there is no reason why a syphilitic patient may not be affected with non-syphilitic eczema. We are prevented from falling into error, however, by finding out whether the eruption appeared simultaneously with other syphilitic manifestations, and at such a distance of time from the period of infection as a study of the natural history of syphilis would lead us to expect, and by carefully examining the eruption itself. If it is syphilitic, it is most apt to occur near the orifices of the body (about the nose, mouth, &c.), though it is by no means confined to these parts. It has a great tendency to assume the circular form, and in the chronic stage to exhibit a coppery tint, and itching is not usually complained of, except sometimes when the syphilitic taint is of old standing. Its edge is generally elevated, and ulcers, when present, are larger, deeper, more unhealthy looking, and often have perpendicular edges and ash-grey bases.

There is one other caution which it is necessary to give, and it is this, that non-syphilitic eczema occurring on the legs has a tendency to exhibit to a certain extent a coppery tint, and large ulcers with unhealthy bases may be present. This is owing to the continued congestion to which these parts are subjected, owing to their distance from the centre of the circulation, to their dependent position, and to their being frequently the seat of a varicose condition of the veins.

If the case is still doubtful, treat the eruption by means of localised mercurial vapour baths or the like, when, if it is syphilitic, it is sure to be modified, if not altogether cured.

It is right to mention that the diagnostic rules, which have just been laid-down, do not hold in certain exceptional instances, for I have met with cases of so-called syphilitic eczema in which the eruption appeared on situations, and presented appearances, not in the least degree characteristic of syphilis, and in which the only indications of their nature were to be found in the history of the case, in the fact of their appearing simultaneously with other undoubted syphilitic manifestations, and in their disappearance under anti-syphilitic treatment.

There are several other forms of skin disease which may be mistaken for eczema, but it will be better to allude to them when the local varieties are discussed, in which place their diagnosis can be studied to better advantage.

In the preceding sections we referred to the symptoms of eczema, the causes which predispose to or occasion an attack, and the diseases for which it may be mistaken, and we are now prepared to form an estimate of its gravity.

The **prognosis** is rarely serious; for, while the eruption causes great irritation and disfigurement when present, it is almost invariably curable. The most grave cases are those in which it covers the greater portion of the cutaneous envelope, especially when it occurs in very young infants or in old or infirm persons. In these instances the natural functions of the skin are interrupted, and the itching and other symptoms may give rise to serious complications, such as exhaustion from anorexia, loss of sleep, and in children even to convulsions. It is a very rare circumstance, however, for eczema to terminate fatally, and therefore it often happens that the prognosis is only serious in so far as it indicates some derangement of the general health. It must accordingly be sometimes regarded in the light of a friend rather than an enemy—a beacon to warn us of danger within.

It is curious and interesting to watch the effect of intercurrent inflammation or fevers upon eczematous eruptions, of which the following are good illustrations:—While I was in attendance upon two children for very severe attacks of eczema erythematodes, affecting the greater portion of the skin, one of them took measles, and two or three days thereafter the eczematous eruption had almost disappeared. The eruption on the other child continued to flourish for a few days longer, when she likewise was seized with measles, and in her case, too, the eruption vanished. There could be no doubt that these children were affected with measles, for, while it was difficult to make out the characteristic eruption on their skins owing to the existing eczema, their younger brother presented about the same time all the typical symptoms of measles. When the morbilli had run its course in the case of the two first-named children, the eczematous eruption gradually but perseveringly returned—a circumstance which unfortunately happens in most instances, and which must therefore be borne in mind with reference to the prognosis.

A few months ago I received the following note from a lady whose boy was under treatment for eczema :—"Since seeing you, my little son has had an attack of scarlatina, and the eczema seems to have been removed for the present. I noticed one curious thing, viz., wherever he had had the eczema badly there was absolutely no eruption, though on parts where he had never had eczema the eruption was most vivid."

A great deal of nonsense has been written about the danger of suddenly "driving-in" (as the expression goes) a severe or chronic eruption, such as eczema. This idea has doubtless in part arisen from observation of facts such as the above, and of the occasional aggravation of bronchitic and dyspeptic symptoms as eczematous eruptions improve, and *vice versâ*, the rationale of which phenomena I have already endeavoured to explain; but it is to be feared that the mistake is often to be traced to the unmerited neglect of the study of skin diseases by the medical profession, the resulting inability to grapple with them successfully, and the consequent temptation, in some cases, to evade the difficulty by the plausible excuse that danger might accrue from any attempt to cure them quickly by driving them inwards. "I have," says Hebra,* "made this remarkable observation, that physicians have talked of metastasis to internal organs, of alternations, and of the danger of curing chronic diseases of the skin, so long as the means of curing eczema were unknown to them. As soon as they could convince themselves of the success of any anti-eczematous treatment, they were the first to abandon their former doctrine, and became my most zealous disciples." While I have treated thousands of cases of eczema, many of them involving the greater portion of the skin, I cannot recall a single case in which any serious evil resulted, even from the rapid removal of the disease. That slightly unpleasant effects are occasionally witnessed, however, I am quite prepared to allow. I call to recollection, for instance, the case of a gentleman, almost the whole of whose body was covered with an eczematous eruption. This I succeeded in removing in a few weeks, and as it went away he began to pass a little blood by his bowels; but, as he himself wrote, he was "not conscious of any uneasiness in the region of the rectum, as if it arose from piles." The same symptoms, he informed me, appeared during his recovery from a previous attack, for which he had been treated by Mr. Startin. In both instances it was slight, and soon passed away without producing any injurious effects; indeed, I have never observed any enduring bad results follow upon the removal of an eczematous eruption, where proper precautions were taken, no matter how quickly it was accomplished. "I can only repeat," says Hebra,* "what I said in the year 1864: that it has been my most ardent wish, the stimulus of all my studies, to cure chronic cutaneous diseases as quickly as possible, and yet, to my most sincere sorrow, I have never succeeded in spite of the use of all possible means, internal and external, in curing such a disease suddenly, or even very quickly." And, while my experience has since only confirmed this, it is particularly true in the case of eczema.

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* "On Diseases of the Skin, including the Exanthemata," by Ferdinand Hebra, M.D. Translated by C. Hilton Fagge, M.D., and P. H. Pye-Smith, B.A., M.D. *New Syd. Soc. translation*, vol. ii., pp. 123-124.

Attacks of eczema vary much in their duration, according to the constitution of the patient, the site, extent, and severity of the eruption, and the course of treatment pursued. Some cases get well without treatment in a few weeks; others last for months or even years. Some would never disappear entirely at all without treatment; but the natural tendency of the disease is to improve now and then, the change for the better being dependent upon the seasons, atmospheric influences, changes of diet, improvement in the general health, &c. When the eruption is very localised it is, as a rule, more difficult of cure than when it is extensive. This is especially true of chronic eczematous eruptions upon the palms, soles, scalp, and hairy portions of the face.

Relapses are very much to be feared, more especially in the case of those who are apparently in very good health, and in whom the occurrence of the eruption seems to be connected with some unknown peculiarity of the system; but they are not nearly so constantly observed as in the case of some other forms of skin diseases—*e.g.*, psoriasis, pityriasis rubra, &c. They are much less common in those who have suffered from the disease from the use of improper food, external irritation, and the like, for we have then tangible causes, by removing which the eruption is less apt to recur.

Now, supposing that we have a case of eczema under observation, how do we know that the eruption is on the decline? What, in fact, are the *symptoms of amendment?* It is a good sign when the disease does not tend to spread by the extension of old patches or the formation of new ones, and when no new crops of eruption make their appearance upon the old patches. It is always a favourable occurrence when the infiltration, exudation, and itching diminish. When these symptoms are nearly gone, erythematous and scaly patches are usually left; but, if the disease is progressing towards a cure, the redness gradually subsides, the scales disappear, and the skin resumes its healthy appearance and feeling. It requires, however, to be mentioned, to avoid disappointment, that, when the eruption appears to be rapidly declining, sometimes for some obvious reason, oftener without any assignable cause, the improvement may suddenly cease, a retrograde movement takes place, and in a few days the cure is as far off as ever.

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* "On Diseases of the Skin, including the Exanthemata," by Ferdinand Hebra, M.D. Translated by C. Hilton Fagge, M.D., and P. H. Pye-Smith, B.A., M.D. *New Syd. Soc. translation*, vol. ii., pp. 140-141.

When it has disappeared, there is usually no trace left of the previous eruption, unless ulceration has occurred; and even then the surface usually resumes its healthy appearance, as the ulcers are for the most part superficial, and do not destroy the deeper tissues of the skin. When they are deep, however, as happens sometimes on the legs, cicatrices are of course left, which vary in size and appearance in proportion to the size, depth, and site of the previous ulceration. Cicatrices may likewise follow the application of escharotics, which, though powerful agents for good, are too often injudiciously used. It need hardly be mentioned, however, that any caustic which has been used so freely as to destroy the deeper structures of the skin, and to leave permanent cicatrices, has been employed by an unskilful hand.

Sometimes, after the cure, the skin, which had previously been affected, is much darker in colour than natural, owing to the previous determination of blood to the part, and the increased deposit of pigment thereby induced. This appearance is oftenest observed, and lasts longest, upon the legs, for the reasons before alluded to as predisposing to the occurrence of ulcers. It is identical with the discoloration which so often follows the application of a blister, instances of which are daily met with in practice; but in both cases the colour generally fades and finally disappears, and the skin resumes its healthy hue.

Treatment.—Having discussed the symptoms of eczema in its various forms, the causes which are fruitful in calling it forth, the diseases with which it may be confounded, and its results as far as they are indicated by the features of individual cases, we are prepared to enter upon the object of our previous investigations, the treatment of the affection.

It may safely be affirmed that the treatment of eczema is far and away the most important practical subject in the whole range of dermatology, and that he who thoroughly understands it, has gone a long way towards mastering the therapeutics of diseases of the skin, not only because of the great frequency of eczema, but also because many other skin affections must be treated upon similar lines. No apology is, therefore, required for dealing with it in considerable detail.

Some cases of eczema are dependent upon constitutional causes, and may often be cured by constitutional treatment alone, some are due simply to local causes and may yield to local treatment alone, and the same remark applies to cases originally due to the state of the general health, but which persist long after the constitutional cause has disappeared, the cutaneous tissues having, so to speak, contracted a vicious habit. But, in the great majority of instances, both constitutional and local treatment is desirable, and generally necessary.

Constitutional Treatment.—It is necessary in this, as in all other diseases, to make a careful examination of the internal organs, and to rectify, as far as it is within the scope of medicine, any deviation from the normal standard which may be detected, and which may be keeping up or aggravating the skin affection. The reader will be aided in this investigation by calling to mind what has been stated with regard to the causes of eczema, and with regard to those states of the system which are most likely to produce or to intensify it. In fulfilling this indication, he must be guided by broad general principles, with which it is presumed he is already familiar. But a few words may be appended under this head, especially with regard to derangements of the digestive organs.

Purgatives and aperients are often useful, though they must usually be looked upon merely in the light of adjuvants to, or forerunners of, other treatment; for no one who has carefully studied this complaint can have failed to observe the injury which usually follows upon a long course of purgatives, except in cases *entirely dependent upon digestive derangement.* It is true that during their use the eruption may improve or disappear; but, whenever they are stopped, it flourishes again as luxuriantly as ever, while that debility which lies at the root of so many cases, is immeasurably increased. A considerable degree of latitude may be allowed in the selection of a purgative, and the remedies with which it may be combined, which must vary with the varying features of different cases; for it is perhaps more true of this complaint than of most others that, while there are many ways of curing it, there is no rule applicable to the treatment of all cases. If the tongue is loaded, the appetite bad, the liver torpid, as indicated by the light colour of the evacuations, &c., and the bowels costive; and if, in addition, the patient is not very strong—small doses of grey powder combined with rhubarb and salicine or quinine may be administered with excellent effect,[*] or sulphate of magnesia in combination with one of the preparation of iron.[†] If the disease is in the acute stage, or if the digestive organs are in the state just mentioned, and the patient is robust, and especially if fulness in the hepatic region is complained of, occasional doses of calomel, alone or in combination with scammony, may be resorted to with advantage.[‡] In cases of infantile eczema, small doses of calomel occasionally (gr. i. to a child of a year old) are often of service to correct digestive derangement, more especially if arsenic or iron or other tonics are being administered; but in no case is it advisable to put patients under the influence of mercury, as is occasionally done, although a trial of corrosive sublimate in small doses, in combination with bark, has been recommended by Fraser and Tilbury Fox, when the patches of eczema are markedly indurated.

With the same object in view (and much more universally employed than calomel, though not nearly so useful), small doses of sulphur, in combination with magnesia or acid tartate of potash, may be taken every evening; and as good a preparation as any is the sulphur confection (*confectio sulphuris*) of the British Pharmacopœia, or compound

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[*] ℞ Quiniæ sulphatis,	gr. xij.	
Pulv. rhei,	gr. xxxvi.	
Hydr. c. cretâ,	℈i.	
Sacchari purificati,	℈i.	
Divide in pulv. xij.		—*M.*

Sig., Two daily. (For an adult.) The dose to be so regulated that the patient has at least one full natural evacuation per day.

[†] ℞ Quiniæ sulphatis,	gr. xlviij.	
Ferri sulphatis,	ʒiij.	
Acidi sulphurici dil.,	℥iss.	
Magnesiæ sulphatis,	℥iij.	
Syrupi zingiberis,		
Tinct. aurantii, āā,	℥iss.	
Inf. calumbæ, ad	℥xxiv.	—*Solve.*

Sig., A tablespoonful in a wine-glassful of water thrice daily before food. The dose of the sulphate of magnesia must be so regulated that the patient's bowels are kept free without his being purged.

[‡] ℞ Hydrarg. subchloridi,	℈i.	
Pulv. scammonii co.,	gr. xl.	
Divide in pluv. iv.		—*M.*

Sig., One every week. (Dose for an adult.)

Or, ℞ Hydrargyri subchloridi,	gr. iv.	
Mas. pil. coloc. co.,	gr. v.	
Extr. belladonnæ,	gr. i.	
Divide in pil. ii.		—*M.*

Sig., One at bedtime, and a Seidlitz powder in the morning. (Dose for an adult.) To be repeated once or twice in the week, if required.

liquorice powder, of which about a teaspoonful may be prescribed. Besides being less effectual to my mind than calomel, it has this additional drawback, that the sulphur is converted into sulphuretted hydrogen, and the excretions have accordingly a very unpleasant odour. In the opinion of some physicians it has this advantage over calomel, that it is in part eliminated by the skin, and is supposed to act beneficially upon that structure, so that, according to this view, it possesses alterative as well as purgative properties. A more pleasant and agreeable preparation is a solution of 3 or 4 drachms of sulphate of magnesia in water, with the addition of 2 scruples of bicarbonate of soda, made to effervesce by the addition of half a drachm of tartaric acid.* This may be repeated every night or every second night.

The doses which have been indicated are for adults, and are merely approximative; for, of course, some constitutions are more susceptible of the action of purgatives than others, and care must be taken to avoid the administration of mercurials as much as possible in the case of those with whom they disagree. Not long ago, for instance, I gave a couple of grains of calomel and three of grey powder to a little girl, which gave rise to the most profuse salivation, ulceration of the mouth, and swelling of the gums and submaxillary glands. This is far more remarkable than the production of similar symptoms in the adult, even with the same dose; for, as a general rule, as all physicians are aware, it is much easier to salivate an adult than a child. Finally, aperients are often of great value, in combination with tonics (such as the quinine, iron, and sulphate of magnesia mixture already given), with the view of preventing the latter from constipating the bowels, or otherwise deranging the organs of digestion.

In some cases *diuretics* are indicated—in those, namely, in which there is functional derangement of the kidneys, and especially torpidity of these organs. But the beneficial effects of remedies of this class must not in every case be attributed to their diuretic action merely—for example, it is very probable that alkaline diuretics, as the

* ℞ Magnesiæ sulphatis, ... ʒiv.
Sodæ bicarbonatis, ... ℈ij.
Aquæ, ... ℥ij.
—*M.*

℞ Sacchari purificati,
Acidi tartarici, āā, ... ʒss.
Syrupi limonis, ... ℥ss.
Aquæ, ... ℥iv.
—*M.*

Sig., Mix the two solutions in a large tumbler, and drink during effervescence. (Dose for an adult.)

bicarbonate, or neutral, which are converted into alkaline salts in the system, as the acetate of potash, do more good in virtue of their neutralising excessive acidity of the system.

Having attended to the condition of the internal organs in general, and of the digestive organs in particular, the internal treatment now radiates in two directions, according as the eruption occurs in those who are apparently otherwise in good health, or in those who are chlorotic, anæmic, scrofulous, or debilitated.

In debilitated and strumous subjects, nourishing food, stimulants in moderation, and tonics (especially phosphorus and iron), are our sheet-anchors, and I have repeatedly cured very severe cases by the systematic administration, for a couple of months, of cod-liver oil and syrup of the iodide of iron, all other treatment of importance having been omitted. The following is a case in point :—Lawrence D., aged about 15 months, was brought by his mother to the Hospital for Skin Diseases, Glasgow, on October 9, 1862, affected with eczema impetiginodes. The eruption covered almost the whole body, with the exception of the fingers and the feet, was very itchy, constantly exuding, and studded with crusts. The child was dreadfully emaciated, "just skin and bone," as the mother remarked. It could neither sleep nor eat, and was so weak that it had to be brought upon a pillow. The case looked hopeless, and, indeed, the child had been given up by the previous attendant; but, acting upon what I have observed in similar cases, 20 drops of syrup of the iodide of iron in a teaspoonful of cod-liver oil were prescribed, to be repeated thrice daily, and the dose of the oil to be gradually increased to a tablespoonful.

On October 16 the child was better. The skin being still itchy, however, a lotion of dilute hydrocyanic acid, containing 15 minims to the ounce of water, was ordered, to be used thrice daily as a palliative. The oil was omitted for a week, as it produced purging. With this exception, the oil and iron were steadily continued till November 17, about five weeks after the commencement of the treatment, when the mother brought the child out of gratitude to show how well it was. There was hardly a vestige of the previous eruption, with the exception of a few dry crusts and discoloured spots on the buttocks, which were rapidly disappearing. The child appeared to be in robust health; it was quite plump, and its cheeks rosy; its skin soft and white; its appetite very good; and its sleep sound and refreshing. The medicine was to be continued for another month.

Here, then, is an instance of an infant cured of a frightful eczematous eruption, and rescued from the jaws of death, by the internal administration of cod-liver oil and iron alone. In severe cases such as this, it is of decided advantage to rub the oil into the skin of the whole body two or three times a day, in addition to its administration internally. Cod-liver oil is sure to do good to such patients if the stomach can bear it, and especially if it is taken greedily and with relish. This is oftenest observed in children whose mother's milk is below par. When such is the case she should no longer give her child the breast, and amongst the higher classes, who can afford to have a wet-nurse, a good one should at once be procured. Amongst the lower orders, the child should be fed, in great part, "upon the bottle," a mode of nourishment which, though inferior to the employment of a good wet-nurse, is much more desirable, when proper precautions are taken, than the exclusive use of the deteriorated milk of the mother. Those children whose health has been impaired by imbibing their mother's milk too long—and instances are often met with, especially amongst the poor, of children being fed upon the breast, not for months, but even for a couple of years—should be weaned without delay, and appropriate nourishing food substituted.

These children often suffer from diarrhœa, but, while special remedies guided by general principles may be cautiously employed towards its removal, one must remember that it is often the result of debility, in which case it may be expected to disappear spontaneously when the diet is altered and the general health improved.

In adults, under similar circumstances, cod-liver oil and iron are almost equally serviceable, and in them, as well as in children, small quantities of stimulants may in some cases be added, though it is generally advisable to use them with caution.

Some patients, and adults oftener than infants—for the latter rarely refuse it, after the correction of any digestive derangement which may be present, if the system really requires it—cannot take cod-liver oil, in which case cream is often substituted, though it is not to be compared with it in efficacy; and, while taken with relish at first, it is more likely to derange the stomach in the long run. So that, if the case is undoubtedly one which calls for the use of the oil, it does not do to let the patient put it aside lightly; but repeated trials of it in various doses and forms must be made, and the bowels must always be carefully regulated before administering it. Sometimes it is tolerated better by swallowing a small pinch of magnesia about half an hour after the oil is taken, as was recommended lately in some of the medical journals, or by putting a little salt on the tongue immediately before it is administered.

It occasionally happens that cod-liver oil is better tolerated when given in combination with tonics, as quinine or syrup of the iodide of iron. Patients who have an unconquerable repugnance to the oil itself may try it in the shape of maltine with cod-liver oil, Kepler's malt extract with cod-liver oil, Mackenzie's (of Edinburgh) compound cod-liver oil emulsion, Furley's cod-liver oil cream, or Carnrick's peptonised cod-liver oil and milk, or it may be given in a concealed form, as in the appended formula.*

Before leaving this subject it may be remarked—although it is hardly necessary after what has just been stated—that I dissent from the opinion of Hebra, that "cod-liver oil, although of the greatest service as a local application, is quite useless when given internally."† Indeed, no one who has carefully studied the writings of this distinguished dermatologist can have failed to observe that, while he lauded, and with justice, the local treatment of skin diseases, he was too apt to depreciate the influence which internal remedies exercise over these complaints, although latterly his views in this respect seem to have undergone considerable modification.‡

When the appetite is very deficient, a pure tonic may be substituted for a ferruginous one with advantage, such as small doses of quinine and sulphuric acid in a bitter infusion; § or, if the stomach is too weak even for this, a little dilute hydrochloric acid alone may be tried in doses of ♏viij, or a teaspoonful of Benger's liquor pepticus in a wine-

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* ℞ Liq. potassæ, ...	♏v.	
Ol. morrhuæ, ...	℥ss.	—*M.*
Et adde,		
Tr. cort. aurantii,		
Syr. aurantii, āā, ...	ʒi.	
Olei amygdalarum amarum, ...	♏i.	—*M.*

† "On Diseases of the Skin, including the Exanthemata," by Ferdinand Hebra, M.D. Translated and edited by C. Hilton Fagge, M.D., and P. H. Pye-Smith, B.A., M.D., 1868. *New Syd. Soc. translation*, vol. ii., p. 143.

‡ When the formation of pus is a prominent feature, and particularly when the disease is complicated—as so often happens—with furunculi (boils), the hyposulphite of soda or the sulphide of calcium may be given; the former is administered dissolved in water in doses of from gr. 20 to 30, three times a day for an adult; the latter in the form of pills, each of which contains gr. $\frac{1}{4}$ to gr. i, and may be taken three times a day; or the medicine may be given in the appended form, in which case it should be made up fresh every day.

℞ Calcii sulphureti, ...	gr. vi.	
Aquæ destillatæ, ...	℥vi.	—*M.*

Sig., Shake the bottle. A teaspoonful every two hours.

§ ℞ Quiniæ sulphatis, ...	gr. xvi.
Acidi sulphurici aromatici, ...	ʒiv.
Syrupi limonis, ...	℥ss.
Inf. cascarillæ, ad	℥viij.

—*M.*, et cola per chartam.

Sig., A tablespoonful twice daily, half an hour before food. (Dose for an adult.)

glassful of water thrice daily after food: these are usually well borne, and aid digestion.

In anæmic cases it is the universal custom to prescribe iron, but for my part, although I do not wish to assert that it is inert, its virtues in these cases have been enormously overrated, and there can be no question that arsenic (of which more hereafter) is infinitely more powerful; but, while I believe this to be true with regard to cases of undoubted anæmia, there can be no question that in pure chlorosis, iron, given in sufficient doses, is the remedy *par excellence*—is, in fact, an absolute specific. It is not, however, every preparation of iron which can be tolerated by the stomach in sufficient quantity to correct the blood disorder, but that which I have found most efficient is Blaud's pills.

But let us now take the opposite class of cases (and very common they are) in which the patients are neither chlorotic, anæmic, scrofulous, nor debilitated, but, on the contrary, appear, with the exception of the eruption, to be in a good state of health. In such instances, what means, operating on the system at large, are we justified in having recourse to?

Some recommend the extraction of blood by means of the lancet, but this is surely never necessary; indeed, I have neither had recourse to it myself, nor seen it employed by others; for, while many severe and extensive eruptions in plethoric persons have come under observation, I have found purgatives—especially mercurial and saline purgatives—answer all the ends in view. The local abstraction of blood by leeches, cupping-glasses, or scarifications is sometimes resorted to with advantage, if the patches of eruption are very acutely inflamed, and especially if the lower extremities are affected, as these parts, for reasons formerly mentioned, are more liable than others to congestion and its results. But even local bleeding may be dispensed with, although I am aware that this opinion will be regarded in the light of a heresy by a few.

In the cases which we are now considering, and applicable, to a certain extent, to the class previously mentioned, in conjunction with the means then recommended, there are certain internal medicines upon which considerable reliance may be placed, and to which allusion must now be made.

Of *nerve-tonics*, those which are most likely to be useful are strychnia and arsenic.

Strychnia may be given alone or in combination—*e.g.*, in the shape of Easton's syrup,* of which the dose is a teaspoonful three times a day, in a glass of water before food, or in the sulphate of magnesia mixture already mentioned, substituting liquor strychniæ in doses of ♏iij-v for the quinine and sulphate of iron: a very good preparation, too, when iron is also indicated, and when there is no constipation, is Young & Postan's granular effervescing iron, bismuth, and strychnia, of which a teaspoonful may be given in a wine-glassful of water thrice daily before food.

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* Equivalent to the syrupus ferri, quiniæ, et strychniæ phosphatum of the U.S.Ph.

Of *arsenical preparations*, the one which is most used is Fowler's solution (liquor arsenicalis), although any of the others may be selected, according to the taste of the practitioner. It is better, however, for the physician to limit himself as much as possible to one preparation of arsenic, for he thus becomes more familiar with its exact mode of operation, and with the probable doses for different constitutions. He must also satisfy himself, before prescribing it, that there is no derangement of the digestive organs, else the remedy is pretty certain to disagree; and, further, if it aggravates in a marked degree the cutaneous irritation (the itching, heat, &c.), which it is pretty sure to do in the acute form, it is a proof that the disease is not in that stage in which benefit is likely to be derived from it. It is now well known, as first pointed out by Hutchinson, that persons taking arsenic are very liable to be affected with zona (herpes zoster), and, if it occurs, it is advisable to omit the use of the remedy until the rash has completely disappeared. An adult may take from 3 to 5 minims thrice daily, and if, after the continuance of this dose for several weeks, no improvement takes place, and it appears to suit the patient in every respect, it may be gradually increased till the disease begins to yield, or until it begins to disagree. It is not necessary to stop it if slight irritation of the eyes or puffiness of the face is induced; but, if these symptoms are at all aggravated, and especially if they are accompanied by anorexia, pains in the stomach and head, nausea, bronchitic irritation, or a feeling of great lassitude and prostration, the dose should be diminished, or in some cases omitted, for a few days. On no account, however, should its administration be stopped *altogether* because these symptoms are produced; and I indorse in a measure the statement of the late Dr. Jas. Begbie that "in order to secure its virtues as an alterative . . . it will be necessary to push the medicine to the full development of the phenomena which first indicate its peculiar action on the system. Arsenic as a remedy is too often suspended or altogether abandoned at the very moment when its curative powers are coming into play. The earliest manifestation of its physiological action is looked upon as its poisonous operation; the patient declares that the medicine has disagreed with him; forthwith the physician shares his fears; the prescription is changed, and another case is added to the many in which arsenic is said to have failed after a fair trial of its efficiency."* It is necessary to observe that the appropriate dose of Fowler's solution varies for different individuals, and that, while 3 minims thrice daily soon disagree with some, 10, 15, or even 20 may occasionally be taken by others with impunity and with benefit. I have repeatedly had occasion to observe—what has not, as far as I am aware, been previously noted—the great liability of patients to catch cold while taking arsenic; and I have so frequently seen bronchitis developed during an arsenical course, as to leave no doubt in my mind of the cause of it. It is therefore much more necessary to warn patients who are taking an arsenical, than those who are being subjected to a mercurial, course of their liability to catch cold.

To prevent the medicine from deranging the stomach, it may sometimes be necessary to give it *during* or *immediately after* meals, and in persons whose digestive organs are weak, a tonic infusion, such as the infusion of cascarilla, gentian, or calumba, forms a very good vehicle for its administration, while in some cases a few drops of morphia may be added † if there is a tendency to diarrhœa.

As the disease yields, the dose may be gradually diminished, but in no case should the medicine be suspended till some time *after the complete removal* of the eruption.

In the case of infants at the breast, it may be administered to the mother, whose milk thus furnishes not only nourishment to her babe, but likewise an antidote to its complaint. But it is much more certainly efficacious when administered directly to the child. For infants about six months old the initial dose should be 1 minim twice or thrice daily, while, for children from one to two years of age, we may commence with safety with 1½ minims, and the dose should, if necessary, be gradually increased, for children, as a rule, can tolerate proportionally larger doses than adults.

In some cases, it is thought advisable to combine arsenic with mercury, as in Donovan's solution (solution of the hydriodate of arsenic and mercury), of which 10 minims is the dose to commence with. Each drachm of the solution contains about one-twelfth of a

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* Dr. Begbie's article "On the Physiological and Therapeutical Effects of Arsenic" will well repay perusal. See his *Contributions to Practical Medicine*, p. 270. Edinburgh: Adam and Charles Black, 1862.

† ℞	Liquoris arsenicalis, ...	ʒiss.	
	Liquoris morphiæ hydrochloratis, . .	ʒi.	
	Syrupi limonis, ...	℥iss.	
	Infus. cascarillæ, ad	℥xij.	—*M.*

Sig., A tablespoonful, by medicine measure, thrice daily, in water, after food.

grain of oxide of arsenic, one-fourth of a grain of oxide of mercury, and five-sevenths of a grain of iodine, in the state of hydriodic acid in chemical combination.

And sometimes it is recommended to prescribe arsenic along with iodine, and without mercury, in which case Neligan's prescription, which he named the ioduretted solution of the iodide of potassium and arsenic,* is a suitable one and is much used.

Sometimes a combination of arsenic with iron is advantageous, and in the case of those whose stomachs are irritable, it may be well to give it in effervescence, as in the appended formula,† or in the form of Young & Postan's granular effervescing iron and arsenic, which is a very pleasant and useful preparation, and the dose of which is a teaspoonful in a wine-glassful of water thrice daily.

I sometimes give arsenic, and I think with good reason, in a concealed form. For instance, I know of a lady for whom Fowler's solution was prescribed, who, finding that she was improving under its use, increased the dose of her own accord, and thereby induced poisonous symptoms. Some time after this, she consulted Cazenave, and on her return from the Continent, she came to her family physician, and informed him that she had never been able to take arsenic since she had administered to herself the overdose. The doctor, on looking at Cazenave's note, found that she was at that very time taking arsenic without knowing it, under his orders, and with good effect. Then, again, some people who consult us have already tried arsenic without benefit, and either refuse to take it again, or are so sceptical of its efficacy that they are apt to take it with great irregularity, and to be convinced in their own minds that they are to derive no benefit from

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* ℞	Sol. Fowleri,	♏lxxx.
	Potassii iodidi,	gr. xvi.
	Iodini,	gr. iv.
	Syrupi florum aurantii,	℥ij.

Sig., A teaspoonful, in a wine-glassful of water, thrice daily.

Medicines: Their Uses and Mode of Administration, by J. Moore Neligan, M.D. Ed. iv., p. 465. Dublin.

† ℞	Ferri citratis,		
	Sol. Fowleri, āā,	ʒiss.	
	Acidi citrici,	ʒvi.	
	Aquæ destillatæ,	℥vi.	—*M.*
℞	Potassæ bicarbonatis,	ʒvi.	
	Tr. cort. aurantii,	℥ss.	
	Syr. aurantii,	℥iij.	
	Aquam, ad	℥vi.	—*M.*

Sig., Put a glassful of water in a tumbler, add a dessert-spoonful of each bottle, and drink during effervescence. Repeat thrice daily, after food.

it—conditions which are very prejudicial to the due operation of any drug.

Very often, in these cases, the previous arsenical course had been improperly carried out, or not continued sufficiently long, and we are thus compelled either to give it in a concealed form or to dispense with the use of a most powerful therapeutic agent. Exception has been taken to the propriety of the recommendation to conceal from patients occasionally that they are taking arsenic. This is a feeling with which, for my own part, I have no sympathy. Surely all that our patients can ask of us is to do everything in our power to benefit them. Besides, those who have called me to task for recommending such a course are surely acting in a similar manner if they prescribe an opium pill under the title of "pilula saponis composita," which is described in Neligan's *Materia Medica* as "a convenient preparation for ordering opium in the pilular form, under a name by which it is unlikely to be recognised by the public."

Alkalies are not nearly so generally employed as the preparations of arsenic in the treatment of eczema. They are most beneficial when the patient is much addicted to the use of stimulants, and when there is a tendency to acidity of the stomach and to the deposit of lithates in the urine, or to rheumatism or gout. The preparation most in vogue is liquor potassæ, which may be given, largely diluted with water, in doses of 20 minims thrice daily to an adult. That which I am most in the habit of using, however, and which has not, I think, been tried hitherto for such a purpose, is the carbonate of ammonia, in doses gradually increasing from 5 up to 30 or even 40 grains thrice daily, care being taken that the preparation is fresh and of full strength. A dose of 40 grains is often borne well by a patient whose stomach has been gradually accustomed to its reception, while a much smaller dose often occasions vomiting in the case of those who have not been in the habit of taking it. Sometimes it is well to combine the ammonia with fowler's solution or one of the other arsenical preparations. If there is a decidedly gouty tendency, small doses of wine of colchicum (say 5 to 7 drops) may be added to each dose. The alkalies must be given on an empty stomach largely diluted with water, and the dose must be gradually increased till the medicine disagrees or the eruption begins to fade.

As is well known, the internal administration of *tar*, which at one time seems to have had a certain degree of reputation, has almost completely fallen into disuse in the treatment of disease, and till recently I accepted without reservation the verdict of the profession against it. But, if there is one thing which has struck me more forcibly than another in the treatment of skin diseases, it is the wonderful influence which the local application of tar exercises on chronic eczematous eruptions, of which more hereafter; and in reflecting upon this remarkable fact I could not but conclude that the action of the tar is not a mere local one, but that it is absorbed, reacts upon the system at large, and through it upon the skin.

Hence, I determined to give a fair trial to it internally in eczema and psoriasis. At this stage of the inquiry, it would ill become me to dogmatise, but I can only state, as an undoubted fact, that marked benefit has sometimes resulted, even after arsenic and various kinds of local applications had failed, and where the tar was administered as a *dernier ressort.* We may commence with 2 drops of purified pix liquida mixed with one-eighth part of rectified spirit, thrice daily, in the case of adults, and gradually increase the dose, if necessary, to 30 or even to 60. The medicine may be taken in a spoonful of treacle or golden syrup, or in the form of pills,* or in capsules. It generally agrees well, but occasionally it produces a copious red rash upon the skin, accompanied by fever, nausea, vomiting, and diarrhœa, and other evidences of digestive derangement. These disagreeable accompaniments, however, soon pass off when the medicine is stopped, and then, with a little humouring, it may be recommenced and given with safety in gradually increasing doses.

It is in the dry form of eczema, occurring in apparently otherwise healthy subjects, that tar is most likely to be serviceable; but it must be admitted that it is not nearly so likely to be useful in eczema as in psoriasis, in which disease its efficacy is occasionally very remarkable.

Of late years, *carbolic acid* has been much employed internally, and sometimes with benefit. It is indicated in the same class of cases as tar, although it is not, as a rule, such an active remedy. It may be given either in pill or in solution,† and the patient should be warned not to be alarmed, if slight giddiness follows its administration, especially when taken before breakfast.

Sulphur has long been esteemed one of the most valuable alteratives which we possess in the treatment of skin diseases, and especially of eczema: but my own experience leads to the belief that it has little power as an alterative, and that, apart from its purgative properties, it is comparatively useless, unless in rheumatic subjects. If a course of sulphur is to be taken, it is usually advisable to prescribe one of the natural mineral waters containing it; and the fact that some of these do not act as purgatives, and yet are beneficial, must not be taken to disprove my assertion with regard to the *modus operandi* of sulphur, for the benefit which accrues is due to the combination of salts held in solution, as well as to the accompaniments, rest, change of air, and scene. Those of Harrogate and Moffat in Britain, and of Aix-la-Chapelle, Enghien, Baréges, Brides-les-Bains, Aix-les-Bains, and Luchon on the Continent, have the greatest reputation in this respect; and, while some of these waters may be had from the apothecary, it is always more judicious, when it can be effected, to send the patient to the spring itself, for he is thus certain to get the waters fresh and pure, and, away from home and the fatigues and anxieties of business, his body is at the same time invigorated, and his mind refreshed.

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* ℞ Picis liquidæ, ... ʒij.
Pulveris glycyrrhizæ, ... q. s.
Divide in pil. lx. Argent.

Sig., Two pills to be taken thrice daily, and the dose gradually increased. (Dose for an adult.)

† ℞ Acidi carbolici, ... ʒiij.
Glycerini, ... ℥i.
Aquæ destillatæ, ... ℥v. —*Solve.*

Sig., A teaspoonful in a large wine-glassful of water thrice daily on an empty stomach.

As regards Harrogate, which is the most celebrated of the spas of England, its purgative waters are very useful in the case of those whose digestive organs have been upset by sedentary habits, free living, and constipation of the bowels; and this health resort is doubly valuable from the fact that it affords not only strong but also mild sulphurous waters, suitable for different habits of body, and saline chalybeate, and chalybeate springs, of which one, the chloride of iron spring (or Dr. Muspratt's chalybeate), acts as a tonic, while another, the Kissingen spring, owing to its being richer in saline ingredients, acts as an aperient as well as a tonic in certain cases. For further particulars I must, without being supposed to indorse all the views which it contains, refer the reader to the little volume published by my friend Dr. Myrtle, of Harrogate, on the mineral waters of that place.*

In conclusion, I would remark that, while some cases of eczema yield to mineral waters after other means have failed, care must be taken not to overrate their advantages, for there can be no doubt that if, in the treatment of eczema in general, one were restricted either to mineral waters or to ordinary medicinal treatment, the former are not for a moment to be compared in efficacy with the latter, provided it is carried out with discrimination and skill.

Before leaving this branch of the subject, it may be well to recall four rules which must be carefully attended to in the employment of the so-called alterative medicines:—

1. Let the dose, at first small, be gradually increased till the

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* *Practical Observations on the Harrogate Mineral Waters*, by Andrew Scott Myrtle, M.D., Harrogate. London: Churchill. 1867.

medicine disagrees, or till the disease begins to yield, and then let it be gradually diminished.

2. If the medicine disagrees, do not omit it altogether without very good reason, but try it in smaller doses or in another form, or omit it for a few days till the bad effects have passed off.

3. To give it a fair trial, it must be continued for a considerable period of time, because in some cases the eruption does not disappear till after it has been administered for many weeks.

4. Do not, as a rule, permit the patient to give up taking the medicine till some weeks have elapsed after the complete disappearance of the eruption.

Quite recently[*] Dr. Henry G. Piffard, of New York, has written a paper recommending the internal administration of *viola tricolor*, a drug first introduced to the notice of the profession by Strack in a monograph entitled *De Crusta Lactea Infantum Ejusdemque Specifico Remedio Dissertatio*, published at Frankfurt in 1779. The latter used it in the form of an infusion, while the former at first gave it—as advised by French writers, especially Hardy—mixed with senna in the proportion of two parts of viola to one of senna. Now, however, he prefers a fluid extract made by the "repercolation" process, using very dilute (25 per cent.) alcohol as the menstruum. In medicinal doses it causes little systemic disturbance, but increases the flow of urine, the odour of which is peculiar, somewhat resembling that of the cat's. In acute cases he gives from 1 to 5 drops to young children, and from 5 to 10 drops to adults in a little water, once, twice, or three times a day, half an hour before meals. In subacute and chronic cases, 10 to 15 drops may be given, to commence with, to the former, and from half a drachm to 2 drachms to the latter. If improvement follows, the initial dose is maintained; if not, it is increased; while, if it aggravates the disease, the medicine is stopped for a few days and then resumed in smaller doses. It should be continued, or increased, if necessary, "until the eruption begins to show signs of activity—that is, until a decided aggravation is imminent." He considers it most useful in the second stage of the disease, with serous or sero-purulent exudation and crusting, and he knows "of no other drug that, singly and alone, is capable of affording so much relief." When, however, the eczema has reached the dry stage, it does not prove so useful as some other drugs. He thinks that its virtues are probably due, in part at least, to the salicylic acid which it contains.

It has already been stated that the local inflammatory action and febrile disturbance set up by vaccination is calculated to call forth the eruption in those who are so predisposed, and to aggravate existing attacks, so much so, indeed, that the operation is frequently delayed for many months on this account. And yet it must be admitted, as I have myself often experienced, that in some chronic and inveterate cases it has precisely the opposite effect, and may therefore be ranked as a curative agent. In illustration of this, two cases reported by Mr. Lawson Tait* may be mentioned. "The first," he says, "was the child of a commercial gentleman of great intelligence, who allowed me to try vaccination after everything else had been done that could be suggested. It was a most obstinate case of eczema over the whole body, the scalp being the seat of its worst display. The glands of the neck were chronically enlarged, and at one time suppurated so seriously as to endanger the child's life. Temporary benefit was derived from change of air, but drugs had no effect. Acting on the usual rule, I put off the vaccination of the child for three several periods of nine months. . . . I told the father that . . . I believed vaccination might cure the child by exercising some influence on its nutrition. He agreed to the experiment; and, to diminish risk as far as possible, I used lymph which had passed through one healthy child from the heifer. The result was most remarkable, for in a few days a marked improvement was visible in the child; and in little more than three weeks all traces of the eruption had disappeared, save a roughness of the skin, which still exists. The hair grew rapidly on the scalp, and the child now is in all respects as fine an infant as I have ever seen.

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[*] *The Medical Record*, April 29, 1882.

"At the same time I had under my care the child of a clergyman, for which many prolonged and various courses of treatment had been adopted ineffectually for an eczematous eruption affecting the whole body, but mainly the face and flexures of the joints. It was nearly two years old, and had never been vaccinated. I told the father of the case I have just related, and he consented to the vaccination. He has sent me the following note of the history:—'To the best of my recollection, the symptoms of skin disease in baby were first manifested when she was about two months old. The disease appeared in a virulent form for the space of nine months, at the end of which time she was vaccinated. After vaccination the child improved rapidly, and in a month not a trace of the malady was left.'" Of course it is only in exceptional cases that such happy results can be expected.

Dr. H. Radcliffe Crocker recommends *counter-irritation* by means of a fly-blister, or repeated sinapisms, for obstinately recurring eczema, and gives notes of some cases in which it was very successful. The position of the counter-irritant should vary with that of the disease. When on the face he applies it behind the ears; when on face and forearms, on the nape; when about the genitals or legs, over the lumbar enlargement; when on one leg only, on the hip over the great sciatic nerve.* From this treatment I have often obtained excellent results.

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* *Brit. Med. Journ.*, January 27, 1882, p. 92.

Of late years, *electricity* has sometimes been resorted to, either by the direct application of the electrodes to the affected patches, or by applying them to other parts of the body, such as the spine, hands, and feet. In the former case the interrupted, in the latter the continuous, current should be used; and occasionally benefit accrues from the use of electric baths, especially in neurotic cases. The tonic effects of electricity are undoubtedly of some value, but I am not inclined to rank very highly the effects of this therapeutic agent in the majority of cases.

The *diet* is of great importance, and must be very carefully regulated, especially in the subjects of the rheumatic and gouty diatheses, and when the disease is associated with symptoms of digestive derangement. The patient should be warned to eat *moderately and slowly*, and to *masticate his food well.* In a few cases it will be found of advantage to prescribe very light or even milk diet, all animal food being avoided for a time—in those, namely, who are labouring under an acute attack, or who have been in the habit of indulging too freely in the pleasures of the table, for there can be no doubt that the eruption, in quite a number of cases, is called forth by excesses in diet, especially among the upper classes. When eczema occurs in diabetic subjects, the avoidance of saccharine and of amylaceous food (which in the system yields sugar) is generally necessary, as well as other treatment applicable to cases of diabetes occurring in those who are not labouring under eczema. Quite recently, on the recommendation of Mr. Balmanno Squire,† a meat diet, even in non-diabetic persons, has been tried on the principle of Bantingism, and occasionally with the best results, although we have not yet sufficient experience to enable us to say exactly in what class of subjects it is likely to prove of service.

In most other cases a simple, mixed, animal and vegetable diet may be recommended, oatmeal, fresh breadstuffs, potatoes, soups containing vegetables (as broth and hotch-potch), cheese, strong tea and coffee, dressed dishes, pastry, pickles, spices, and articles of diet known by experience to disagree being generally avoided, while sweet things should be either omitted or taken very sparingly. The use of wines and malt liquors must usually be suspended, and only a little weak whisky and water taken with meals, unless in scrofulous, debilitated, and anæmic subjects, where these may often be used more liberally with advantage; but it must be remembered, with reference to prognosis, that the cure of an eczema is much more difficult when the patient has been addicted to the excessive use of stimulants. It is impossible to lay down rules applicable to every case, but it may be safely assumed that, whenever dyspeptic symptoms are present, the careful regulation of the diet is an important element in the treatment.

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* *Brit. Med. Journ.*, July 9, 1887.

† *Ibid.*, April, 1882, p. 499.

In this last class of cases in particular, as well as in gouty and rheumatic subjects, *exercise* in the open air is of the greatest importance, and riding, and joining in amusements of an active kind, such as shooting, cycling, and golfing, are especially to be recommended; but in debilitated and anæmic persons, while they should be in the open air as much as possible, exercise should be in great moderation and short of fatigue, and we should be guided as to its extent and character more by its effect than by its amount.

Local Treatment.—If, as I hope, the reader is convinced of the great benefit which accrues from the judicious selection of internal remedies in the treatment of eczema, and of their power, in many instances, of removing the eruption when administered alone, he will, perhaps, be hardly prepared for the statement which is made, as the result of a large experience, that the local treatment is in many cases even more effectual than the constitutional, although it must be confessed that the applications made use of by many practitioners are unfortunately too often ineffectual, and not unfrequently injurious.

The great success which attends the use of local applications is the less surprising, if we bear in mind that some cases of eczema are local diseases throughout their whole course, being due to local irritation, and that many others, constitutional in their origin, owing to the constitutional taint which produced them having subsided, are reduced at last to the category of local affections, our skins having the same tendency as ourselves to contract bad habits. Further, the mistake is too often made, not only by the public, but also by the profession, of supposing that applications to the skin have a merely local effect, whereas there can be no doubt that some of them, at all events, are to a considerable extent absorbed, act beneficially upon the system at large, and through it react upon the skin.

I shall not attempt a description of all the preparations in general use—some of them good, some useless, many hurtful—but shall give a short account of those which I have found most valuable, and, what is of the greatest importance, point out, as far as possible, the indications for their use.

Before doing so, however, it may be well to direct attention to the fact that there are a great many different ways of reaching the same goal, and also that a mistake, very often committed, is the too frequent change of remedies. As regards the last point, a very good general rule to lay down is, to persevere in the use of one kind of treatment as long as the case continues to improve. And, to avoid disappointment, it must be mentioned that local applications are by no means uniform in their action, owing to the difference of sensibility of different skins, and for other reasons; hence, they sometimes aggravate the skin affection, even when used in what appear to be appropriate cases.

The first point in the local treatment of every eczematous eruption, without exception almost, is to remove the crusts which have formed upon it. Till this is done, we can only guess at the condition of the parts beneath; our applications must, in consequence, be selected at random, and these cannot reach the diseased surface whose condition they are intended to modify.

The removal of the crusts is a very simple matter, and each practitioner has his own favourite method of procedure. I usually recommend the parts to be thoroughly saturated with oil, and the crusts, thus softened, are removed by washing with warm water, or, in the case of hairy parts, by combing. If this fails, a poultice, composed of crumbs of bread and hot almond oil, may be applied to the eruption at night; and, if the crusts do not come away with the poultice in the morning, the parts should be lubricated with fresh almond oil, and the crusts removed with the finger nail about half an hour afterwards, when they have become thoroughly softened. In many cases, the application of vulcanised india-rubber dressings (which will be treated of further on) is the most efficient means of removing them, especially when the head is attacked.

Supposing, now, that all the crusts have been removed, and the diseased surface fully exposed to view, what local applications are to be made use of?

Eczema acutum.—If the eruption has just made its appearance, if the surface is acutely inflamed, if it is the seat of a copious eruption of vesicles or pustules, if there is much swelling of the parts, or if burning heat is complained of in place of itching, we must exercise great circumspection as to the local treatment. In some cases every kind of local application is injurious, so that, if the above symptoms are well-marked, it is often better to avoid them altogether until the acute symptoms have in a measure subsided.

Absorbent Powders.—One of the safest methods of treatment is to dust the parts two or three times daily with an absorbent powder, such as powdered talc, starch, oleate or oxide of zinc, calamine (carbonate of zinc), lycopodium, carbonate of magnesia, emol, or Taylor's cimolite.* The last is a fine and very scarce natural variety of steatite; it is found most abundantly in Spain, and is composed principally of silicate of magnesia. It is perfectly bland and unirritating, is in the finest state of subdivision, and has a smooth and oily feeling, thus combining all the requisites for a perfect soothing powder. To any of these salicylic acid (2 per cent.), or boracic acid (10 per cent.), or, to allay burning heat, a little powdered camphor may be added. They may be combined in various ways.*

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* Prepared by John Taylor, 13 Baker Street, Portman Square, London, W.

In very acute cases cold potato-starch poultices are exceedingly useful, and usually reduce the inflammation in two or three days.

In the same class of cases *soothing lotions* are useful, and one of the best is calamine lotion, composed of two drachms each of oxide of zinc and glycerine, half an ounce of calamine, and six ounces of rose water (shake the bottle).

Soothing ointments are generally indicated in the acute stages of eczema, and are also of service with the view of softening and removing crusts and other *débris*. They not only act as sedatives, but also afford a covering for, and protection to, the inflamed parts, and exclude the air, but they require to be prepared with the utmost care and with perfectly fresh ingredients; and even then, in a few persons, owing to some peculiar idiosyncrasy, they are apt to prove irritating, and cannot be tolerated, no matter what their composition may be. Fortunately this is only observed in very exceptional cases.

A few of the more soothing ointments may now be mentioned. A very good application is a mixture of equal parts of lead plaster and vaseline (Kaposi), or of powdered oxide of zinc and glycerine, to which a little camphor may be added, if necessary, as follows:—

℞ Pulv. camphoræ, ...	℈i.
Pulv. zinci oxidi, ...	ʒij.
Glycerini, ...	ʒi.
Adipis benzoati,.	℥i.
Cochinillini, ...	gr. i.
Olei rosæ, ...	♏i.—*M.*

One of the favourite remedies in Britain is the "unguentum oxidi zinci benzoatum" of Erasmus Wilson, Bell's formula for which is as follows:—

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* ℞ Zinci oxidi,
Pulv. aluminis plumosi,
,, rad. iridis floris, āā, . . . ʒi.
,, amyli, ... ℥ij. —*M.*
Sig., Dusting powder. (Hebra.)

℞ Camphoræ, ... ʒss.
Sp. rectificati, ... q.s.
Pulv. talci,
Zinci oxidi, āā, ... ʒvi. —*M.*

Sig., Dust a little over the part occasionally. (Let a small quantity be made at a time, and let the powder be kept in a stoppered bottle, as it loses its strength by exposure to the air.)

℞ Adipis preparati, ...	℥v.
Gummi benzoini pulveris, . . .	℥i.
Licquefac, cum leni calore, per horas viginti quatuor, in vaso clauso; dein cola per linteum, et adde	
Oxidi zinci purificati, ...	℥i.
Misce bene, et per linteum exprime.	

To this a drachm of rectified spirit, spirits of camphor, or Price's glycerine may sometimes be added with advantage. The benzoin prevents the ointment from becoming rancid and irritating, while at the same time it imparts to it a certain fragrance. It is an excellent preparation, but, owing to the white crust which is apt to form, it is inferior to others when the eruption is situated upon uncovered or upon hairy parts. In such situations, the zinc ointment of Dr. L. D. Bulkley, of New York, is preferable, and is composed of pure carbonate of zinc and the ceratum galeni (cold cream), in the proportion of half a drachm to the ounce.

One of the most valuable soothing ointments is the "unguentum diachyli albi" of Hebra, of which the following is the formula:—

℞ Olei oliv. opt., ...	℥xv.
Lithargyri, ...	℥iij et ʒvi.
Coque l. a. in ung. moll. dein adde	
Ol. lavandulæ, ...	ʒiij.
M. Ft. unguentum.	

This ointment is likewise unsuitable for hairy parts, on account of its matting the hairs together.

Unna recommends the following:—

℞ Lanolini anhydrici, ...	ʒi.
* Adipis benzoati, ...	ʒij.
† Aquæ rosarum, ...	ʒiij-ʒvi.

Pastes.—Another excellent application, except in very acute cases, is Lassar's paste, composed of ʒss of salicylic acid, ʒvi each of starch and oxide of zinc, and ʒxijss of pure lanoline, or the following modification of it:—

℞ Acidi salicylici, ...	ʒi.
Zinc carbonatis pur.	
Terræ cimoliæ.	
Linimenti calcis, āā, ...	℥i.
Lanolini anhydrici, ...	℥iij.—*M.*

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* Or ung. zinci benzoati. † Or calcis, or liquor plumbi subacetatis.

Ihle's paste, though rather more stimulating, is likewise serviceable. It is composed of resorcin gr. x, lanoline, vaseline, oxide of zinc, and powdered starch of each ʒij. These pastes are used thus—The affected part is thoroughly cleansed, after which it is thickly spread with the paste: this is covered with a thin layer of Lawton's absorbent cotton, and kept in position by means of an absorbent bandage, or, on the head by a cap.

Ointments containing oleates of zinc, lead, and bismuth have recently been justly recommended by Shoemaker and others.* One of the most soothing ointments, though not a true oleate, was prepared at my suggestion by Messrs. Fraser & Green, chemists, Glasgow, and is composed of

℞ Bismuthi oxidi,	ʒi.
Acidi oleici,	℥viij.
Ceræ albæ,	ʒiij.
Vaselini,	ʒix.
Olei rosæ,	♏v.

I have not only used this ointment with the very best results myself, but those of my professional brethren to whom I have recommended it have professed themselves equally satisfied with it; and one medical man in particular recently informed me that it was the only ointment of the many which he had tried, which had proved a sedative in his own case.

Instead of merely rubbing soothing ointments upon the inflamed surface, as is so often done, it is *always preferable*, when at all possible, to apply them spread thickly upon pieces of linen, which should not be too large, else they do not lie evenly upon the inflamed parts. As a protective coating, especially on exposed parts, Dr. Provan's paste, composed of tragacanth, glycerine, of each ʒiv, borax ʒss, distilled water, a sufficiency; or Pick's *linimentum exsiccans*, composed of tragacanth 5 parts, glycerine 2 parts, hot water 100 parts, or kristaline may be used.

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* The *Medical Bulletin* of Philadelphia for July, 1882 (vol. iv., No. 7), contains an interesting paper by Dr. John V. Shoemaker on "The Oleates and Oleo-palmitates in Skin Disease." He recommends that the oleates of zinc, lead, and bismuth should be prepared in the following manner:—

"Oleate of zinc is made by decomposing a sodium oleate with a saturated solution of zinc sulphate, boiling out and drying the precipitate and then reducing it to an impalpable powder, which is rapidly accomplished. One part thereof melted with three parts of a fatty vehicle yields the ointment I have been in the habit of using. I have, however, obtained the very best results with the oleate of zinc alone, and not mixed with a fatty diluent, which is a fine pearl-coloured powder, with a soft-soapy feel, very much like powdered French chalk.

"Lead oleate is derived by precipitating a sodium oleate with a solution of lead sub-acetate. The washed and dried precipitate melted with equal parts of lard gives the ointment I designated as ointment of lead oleate.

"Bismuth oleate can only be obtained by first preparing a crystallised bismuth nitrate, dissolving this in glycerine, decomposing with this the sodium oleate. It is of ointment consistence, and should be used as thus obtained."

He is of opinion that the true oleates possess the following advantages over ordinary ointments:—

"First, their deep penetration; secondly, their freedom from rancidity; thirdly, their cleanliness of application; fourthly, their great economy; and, fifthly, their antiseptic action."

Glycerine Gelatines.—We are indebted to Pick for the introduction of preparations of gelatine, and to Unna for modifying and improving upon them. The most important of these is the latter's zinc gelatine. It is composed of 15 parts each of zinc oxide and of gelatine, 25 of glycerine, and 45 of distilled water, to which 2 per cent. of ichthyol is often added (zinc-ichthyol gelatine) with the view of checking hyperæmia of the skin. The deep porcelain or tin pot which holds the preparation is placed in a pan containing boiling water. In a few minutes the gelatine melts, when it is painted thickly over the affected surface, taking care that it is not too hot. A thin smooth layer of absorbent cotton wool is then laid upon it, with which, when it is dry, it forms a covering and protection to, and also exercises gentle pressure upon, the part. On the limbs the pressure may be increased by the application of a carefully adjusted bandage. The dressings, which are changed daily or every second or third day, as required, are readily removed with the aid of a little warm water, or often, when hairy parts are not involved, without it. This treatment, though specially indicated for acute or sub-acute, is likewise often serviceable in chronic cases. In the latter other medicaments may be combined with the zinc gelatine, such as carbolic and salicylic acids, resorcin, naphthol, and creosote, but, as these ingredients tend to prevent the gelatine from solidifying, a harder zinc gelatine is employed containing 4 parts of gelatine, 3 of zinc oxide, 5 of glycerine, and 9 of water (gelatina zinci dura).

Plaster Muslins and Salve Muslins.—Another class of preparations, of great value in the treatment of skin affections, is the plaster and salve muslins of Unna.* The plaster muslins (Guttapercha—pflastermulle) are composed of muslin coated with guttapercha, on which a fatty basis is spread impregnated with the medicament. To prevent adhesion of their opposed surfaces there is a covering of gauze which must be gently removed, and the plaster should be applied in small pieces, so as to ensure its being in close contact with the affected parts.

The salve muslins (Salbenmulle) contain a larger amount of fatty basis, are softer, and not nearly so adherent, and can be had spread upon one, or upon both sides.

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* Manufactured by P. Briersdorf & Co., Oelkersallee, No. 82, Altona, Hamburg. (His catalogue can be had on application.)

In acute eczema the preparations of this class, specially to be recommended, are zinc and lead plasters, and zinc, lead, and zinc-ichthyol salve muslins. They are generally changed every day, or oftener if required.

Eczema chronicum.—When the disease becomes chronic, as is indicated more particularly by the disappearance of the burning heat and the supervention of itching, the local applications which are appropriate are very different; but even they vary according to the stage of the eruption.

If there is *infiltration* of the skin to any extent, the treatment by means of *potash* applications is often attended with great success, and was much prized by Hebra.

The strength of the local application varies with the amount of the infiltration, and likewise with the extent of the eruption; for of course, when the disease is extensive, it would be injudicious to make use of those very strong applications, which may be applied with safety in the more circumscribed cases.

If the infiltration is slight, or the rash extensive, common *potash soap* (soft soap, black soap, sapo mollis, sapo viridis), or a solution of one part of it in two of boiling water, a little oil of rosemary or citronella being added to conceal in part the odour, may be used.* A piece of flannel dipped in this should be rubbed as firmly as possible over the affected parts night and morning, and the solution allowed to dry upon them, or a piece of flannel rung out of the solution may be applied to the part and left in contact with it all night, if the patient can bear it.

A more elegant preparation is *liquor potassæ,* which may be painted over the eruption once daily with a large brush, its irritant properties being neutralised by means of tepid water if the smarting becomes excessive.

Instead of soft soap or liquor potassæ, solutions of *potassa fusa* may be employed. In the mildest cases, with only slight infiltration, 2 grains of potassa fusa, in the more severe, 5, 10, 20, 30 grains, or even more, in an ounce of water may be used; but we should rarely resort to a stronger solution where the eruption is extensive. Even the solution containing 30 grains to the ounce, which may be applied in the same way as liquor potassæ, must be used with great caution and soon washed off with water, and the application should not be repeated oftener than once daily at the most. When such a strong

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* ℞ Saponis mollis, ...	℥i.	
Aquæ bullientis, ...	℥ij.	
Olei citronellæ, ...	ʒss.	—*M.*

solution is prescribed, and especially if the eruption is extensive, it is advisable for the physician to apply it himself, at first, at all events; and in no case should it be used so strong, or allowed to remain on the surface so long, as to produce manifest destruction of the skin. When the eruption is very limited and very obstinate, and particularly when the patches assume the appearance represented by the terms eczema sclerosum and verrucosum, a much stronger solution may be applied, and Hebra sometimes used a solution of 1 drachm of potassa fusa in 2 drachms of water. "After the accumulated masses of dead epidermis, in the form of scales, crusts, &c., have been removed by appropriate means, so as to expose the subjacent red, infiltrated, moist surface, the solution is applied with a charpie brush, passed quickly and evenly backward and forward over the affected part in every direction; then the hand, or a piece of flannel, is to be dipped in water, and with it the lotion spread still more equally over the whole surface. A white froth, not unlike soapsuds, will soon be observed to form on the eczematous patch; and this only occurs when water is thus rubbed in after application of the caustic solution.

"When this part of the process has been thus finished, a considerable quantity of fluid exudes in drops upon the surface. To allay the pain, and to prevent the formation of scabs, rags dipped in cold water should be applied and frequently changed during the day. The patient need not be disturbed at night if care be taken that the rags are kept wet, and this is best done by the help of oil-silk or gutta-percha. After water-dressing has been thus constantly applied for a week, the minute raw places of greater or less depth, which the caustic application has here and there produced, will have recovered their epidermis, and the itching, which had quite ceased during this time, will again become troublesome. Moreover, it will be soon observed that red spots reappear here and there, and vesicles are seen; this should lead to a repetition of the former procedure. When the water-dressing has entirely removed the traces of the second caustic application, a third should follow, and this weekly course of treatment should be repeated as often as the symptoms just mentioned return. It is scarcely ever necessary for the solution of potash to be used more than twelve times, even in the most severe cases; for even if after this a few small places should show a disposition to relapse, some more gentle treatment will suffice to prevent it."*

For this class of cases, Unna recommends the application of salicyl-cannabis, or salicyl-creasote plaster mull.

Having pointed out that the strength of the potash or zinc solutions, which are employed, should vary with the amount of infiltration of the skin, it will probably have occurred to the reader that, when the eruption is extensive, and some of the patches much more infiltrated than others, a weak solution may be applied to the latter, a stronger one to the former; and it is equally obvious that, as the infiltration subsides, the solution may be gradually diluted.

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* "On Diseases of the Skin, including the Exanthemata," by Ferdinand Hebra, M.D. *New Sydenham Society translation*, vol. ii., p. 152.

Often, by continuing the use of a weak potash solution for some time after the infiltration is gone, all trace of the complaint disappears; but, in most instances, it is better to substitute for it one of the preparations about to be mentioned, as the disease verges upon a cure. There is just one caution to be given before leaving this subject, namely, that care must be taken in the use of these solutions, and especially the stronger ones, in the case of infants, of delicate females, or of old and infirm persons, as the shock produced by their application might possibly be followed by serious results.

While these preparations are being employed, cold water forms a very agreeable and useful adjunct. The affected parts may be bathed with it, or it may be allowed to fall upon them from a height, with the aid of a watering-can. Sometimes cloths wrung out of cold water may be placed upon the eruption with advantage in the intervals between the applications.

In every case, when practicable, soft water should be used; indeed, all persons with delicate skins should avoid hard water. If that which is at the disposal of the patient is hard, it should be boiled, so as to deposit a great portion of its salts; and then, as recommended by Hebra, it may be poured boiling upon bruised almonds or flour, or other mucilaginous substance, and used after it becomes cool. It is better still to make use of distilled or pure rain water. But in every case the *constant* use of water should be avoided as calculated to do harm instead of good.

Another local application from which great benefit is often obtained is the *permanganate of potash,* the parts being sponged twice a day with a solution of 10 to 20 grains in an ounce of distilled water.

It has been already pointed out that in mild cases the eruption is often kept up by the scratching alone, and that in these instances local sedatives have sometimes the effect of curing the disease by allaying the itching, and the desire to scratch the part. Hence it will be understood how, even in more severe cases, while the scratching does not of itself keep up the disease, it tends to aggravate it, and to make it more rebellious.

We must, therefore, exhort the patient to refrain from scratching as much as possible, and at the same time we must employ means to allay the itching. The potash and zinc preparations have certainly this effect in a marked degree, and so has the application of cold water (for the time); but sedatives and narcotics taken internally are not, in my opinion, of the slightest service, except in so far as a large dose may produce sleep, and when the patient has long been deprived of it, owing to the itching, this is much to be desired. Lotions of dilute *hydrocyanic acid,* in proportions varying from ♏x to ʒi in an ounce of distilled water, with the addition of a drachm of glycerine, may be applied with advantage whenever the part is itchy, instead of *giving way to the desire to scratch.*

When such a strong solution as ʒi of prussic acid to ℥i of water is used, it must not be applied over an extensive surface, and the patient must be warned that it is a very powerful poison. The potash solutions previously referred to are of the greatest service for the alleviation of the itching, as well as for the removal of the infiltration of the skin, so that it is often advantageous to combine the prussic acid with one of them, as in the accompanying prescription.*

Some prefer the use of cyanide of potassium in the form of ointment. For this purpose from 5 to 10 grains may be mixed with cold cream or the benzoated oxide of zinc ointment.†

In some cases, too, a pomade containing chloroform‡ or a mixture of chloral and camphor§ is of service.

Although I have been in the habit of using the preparations of camphor principally with the view of allaying the burning heat in acute cases of eczema, I believe them to be equally serviceable for the purpose of moderating the itching in chronic ones.

But the most powerful remedies which we possess for the relief of itching, as well as for the removal of the disease, are the tarry preparations, which will be next considered.

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* ℞	Potassæ fusæ, ...	gr. v.	
	Acid, hydrocyan. dil., ...	℈ij.	
	Aquæ rosæ, ...	℥i.	

Sig., Sponge the parts night and morning, and when the itchy sensation is severe.

† ℞	Potassii cyanidi, ...	gr. vi.	
	Cerati Galeni (Paris codex), . . .	℥i.	
	Cochinillini, ...	gr. $\frac{1}{4}$.	—*M.*

‡ ℞	Chloroformi, ...	ʒi.	
	Adipis benzoati, ...	℥ij.	
	Cochinillini, ...	gr. $\frac{1}{4}$.	—*M.*

Sig., Rub a little firmly over the parts which are itchy, but let none of the ointment remain undissolved upon the skin.

§ ℞	Chloralis hydratis,	
	Camphoræ, āā, ...	gr. x.
	Misce intime, et adde	
	Unguenti simplicis, ...	℥i.

Sig., Apply when the parts are itchy.

The local application of *tarry preparations* is of the utmost value, and has long been in vogue in the treatment of eczema, but they have been far too frequently used in a routine way, and without discrimination. When any of those conditions are present to which I have already referred, as indicating the necessity for using soothing applications, tar is, as a rule, *decidedly* contra-indicated; for it must ever be borne in mind that tarry preparations are chiefly of use when the eruption is chronic or declining. Even then it occasionally happens, owing apparently to the skin being unusually sensitive, that the disease is aggravated instead of ameliorated by them, or that a chronic is converted into an acute eruption. Hence they must be employed at first with due care, and sufficiently diluted.

Those most applicable for dispensary patients, owing to their cheapness, are wood tar (pix liquida), coal tar (which I prescribe under the name of pix mineralis), and Burgundy pitch (pix burgundica); but, in private practice, when expense is no object, more elegant preparations, such as oleum rusci or oleum cadini (oil of cade) may be employed. The former of these is the product of the bark of the white birch, the latter of the dry distillation of the wood of the juniperus oxycedrus,* which should be obtained from Aix-la-Chapelle, else a liquid prepared from common tar is apt to be supplied in its stead.

Whichever of these preparations is selected should be rubbed firmly over the eruption by means of a piece of flannel or a small stiff brush, and allowed to dry upon it. It may be applied once or twice daily, or oftener, if the irritation of skin is moderated or allayed by its use, and returns before the stated time for its reapplication. It should be washed off before each reapplication.

In many cases it is more appropriate to prescribe tarry preparations in the form of ointments, particularly when the parts feel stiff and rigid, and when there is a tendency to the formation of fissures. They may be applied in the form of the unguentum picis liquidæ in a diluted form, or variously combined, as in the appended formulæ.†

A most valuable way of using tar is in the form of lotions, and it may be combined in various ways, as, for example, with one of the potash solutions. A most admirable preparation, one of Hebra's, which is used to a great extent at the Hospital for Skin Diseases, Glasgow, under the name of "tinctura saponis viridis cum pice," and often with the most charming effect, is a mixture of equal parts of common tar, methylated spirit, and soft soap, which should be applied exactly in the same way, and as frequently as the simple solution of soft soap.

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* *Medicines: Their Uses and Mode of Administration*, by J. Moore Neligan, M.D. Fourth edition, p. 405. Dublin.

† ℞ Picis mineralis, ... ʒi.
Glycerini (Price), ... ʒij.
Adipis benzoati, ... ℥iss. —*M.*
Or, ℞ Olei rusci purificati, ... ʒiss.
Zinci oxidi,
Olei amygdalarum,
Adipis benzoati, āā, ... ℥ss.
Olei rosæ, ... ♏ij. —*M.*

Sig., Melt a little and rub firmly into the eruption two or three times daily.

In private practice, where expense is less an object than the elegance of the preparation, oil of cade may be substituted for common tar, and rectified spirit for methylated spirit, while a little oil of lavender may be added to conceal in part the disagreeable odour;* or, instead of using soft soap at all, a solution of potassa fusa may be added to the mixture, the amount of the caustic potash depending upon the amount of infiltration of the skin, and the extent of surface to which it has to be applied.†

An unpleasant feature of these lotions is that they produce a temporary but marked discoloration of the parts to which they are applied, and, if the eruption is situated on uncovered parts, and especially on the face, this is a serious inconvenience, and indeed some patients refuse to employ them on that account.

Further, it not uncommonly happens that they prove too stimulating, and then they have a tendency to aggravate instead of to remove the eruption. It was, therefore, very desirable to find out some way of altering their colour, and of diluting them, and the difficulty was to produce a mixture capable of forming an emulsion with water. This can be done, I find, by mixing mineral tar and spirit in certain proportions, and by adding a little strong solution of ammonia, as in the formula which is appended.‡ Such a mixture forms a yellowish emulsion with water in all proportions, and hence we can dilute it as little or as much as we please. The mixture sold by Messrs.

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* ℞ Saponis mollis,		
Spiritûs rectificati,		
Olei cadini, āā, ...	℥i.	
Olei lavandulæ, ...	ʒiss.	—*M.*

Sig., Rub a little firmly over the eruption night and morning, and wash it off before each reapplication.

† ℞ Potassæ fusæ, ...	gr. ix.	
Spiritûs rectificati,		
Olei rusci,		
"Eau de Cologne," āā, ...	℥i.	—*M.*

Sig., Sponge the parts night and morning, and whenever itching is troublesome.

‡ ℞ Picis mineralis, ...	ʒij.	
Sp. rectificati, ...	℥ij.	
Cola et adde		
Liquoris ammoniæ fort., ...	♏viij.	
Glycerini (Price), ...	ʒvi.	
Aquæ destillatæ, ad	℥xij.	—*M.*

Sig., Sponge the parts two or three times daily.

Wright & Co. under the name of "liquor carbonis detergens," which is stated to be a concentrated alcoholic solution of the active principles of coal tar, has probably a somewhat similar composition. It is a very excellent preparation, but is more expensive than that to which I have just alluded.

I have been informed by Mr. J. Wheeler, Pharmacist, Ilfracombe, that he has recently discovered that, by the addition of laminaria saccharina (sea belt)—as prepared by him—to pix liquida, it is miscible with water in all proportions.

It is only very recently that *carbolic acid,* which is obtained from "coal-tar oil by fractional distillation and subsequent purification," has been employed in the treatment of disease, and indeed even now it is used principally as a disinfectant and antiseptic. There can be no doubt, however, that it possesses many valuable properties, and that it is destined ere long to play a much more important part in the therapeutics of skin diseases.

I have had many proofs of its value in the management of eczema. As an external application it is best to employ it in solution, as in the appended formula,* but the strength of the mixture must depend upon the degree of chronicity of the skin disease. It removes at once the fetid odour which occasionally exhales from eczematous surfaces, counteracts the itching, and sometimes heals up the excoriations and ulcerations with remarkable rapidity.

If I were to compare the value of carbolic acid with that of the tarry preparations just referred to, I should be inclined to say that the former is decidedly inferior to the latter, as a rule; but that it *may* succeed when tarry preparations have failed, and that it is also sometimes to be preferred, owing to the aqueous solution being quite colourless when fresh, and exhaling an odour which, to most persons, is neither pungent nor otherwise disagreeable.

Another preparation of considerable value is Unna's compound resorcin ointment,† and sometimes pyrogallol or chrysarobin may be substituted with advantage, but only in very chronic cases (see treatment of psoriasis).

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* ℞ Acidi carbolici cryst., ...	ʒij.	
Glycerini (Price), ...	℥ss.	
Sp. vini rectificati, ...	℥vss.	
Olei rosæ, ...	♏ i.	—*Solve.*

Sig., Sponge the parts night and morning, and when itching is complained of.

† ℞ Resorcin,	
Ammonii sulfoichthyolici, āā, . .	pts. 5
Acidi salicylici, ...	,, 2
Ung. simplicis, ...	,, 8

Misce fiat unguentum.

The preparations of *mercury* are sometimes of service, especially when the eruption is verging upon a cure, when the infiltration and exudation are gone, and the itching moderated, although in many cases it is difficult to say how much of the benefit derived is due to the unctuous substances with which they are usually combined, and how much to the mercurials themselves, for unguents do good, apart altogether from the active ingredients which they contain. They are not to be compared for one moment with the tarry preparations, unless a decidedly syphilitic taint lies at the root of, or complicates the disease.

Any of the ointments of the British Pharmacopœia may be used, as the unguentum hydrargyri ammoniati, nitratis, oxidi rubri, iodidi rubri, or subchloridi; or the mercurial preparations which enter into their composition may be given in a more concentrated or diluted form,* according as the parts require much stimulation, or are irritated thereby. If itching is complained of, a little cyanide of potassium, camphor, carbolic acid, or the like may be added, as in the subjoined prescriptions.†

If a lotion is preferred, from 1 or 2 grains of the perchloride of mercury may be dissolved with the aid of a little alcohol, and mixed with an ounce of rose water, while a little dilute hydrocyanic acid may be added if necessary, the solution being applied to the part two or three times daily.‡ In using mercurial preparations locally, one must always bear in mind the possibility of their being absorbed in sufficient quantity to produce salivation; hence care must be taken in treating extensive surfaces, and the patient should be warned to discontinue the application if the gums become tender. Some time ago I ordered a lotion of perchloride of mercury (gr. ij to the ℥i of water) to be applied to the nose of a lady, and in three days, to my astonishment,

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* ℞	Hydrargyri bisulphureti,		
	Hydrargyri nitrico-oxidi levigati, āā, .	gr. vi.	
	Creasoti, ...	♏ij.	
	Adipis recentis, ...	℥i.	—*M.* (*Startin*).

† ℞	Hydrargyri ammoniati, . . .	ʒi.	
	Adipis benzoati,		
	Glycerini amyli, āā, ...	ʒvi.	
	Acidi carbolici, ...	℈i.	—*M.*

Sig., Apply two or three times daily.

Or, ℞	Liquoris carbonis detergentis, . .	ʒi.	
	Ung. hydrargyri nitratis, ...	ʒiij.	
	Ung. simplicis, ...	ʒiv.	—*M.*

‡ ℞	Hydrargyri perchloridi, ...	gr. xij.	
	Acidi hydrocyanici dil., ...	ʒij.	
	Glycerini (Price), ...	ʒiij.	
	"Eau de Cologne," ad	℥vi.	—*M.*

Sig., Sponge the parts two or three times daily.

salivation had occurred. On the other hand, I have repeatedly applied stronger lotions to extensive surfaces for weeks without the occurrence of the slightest tendency to salivation, thus showing the peculiarities of different constitutions.

The preparations of *sulphur* are of great value when the disease is in the dry scaly stage, especially in the form described by Unna as eczema seborrhoicum. His zinc-sulphur salve muslin is an excellent application, as well as his "pasta zinci sulfurata."*

In very chronic cases a combination of naphthol and sulphur may be used, but, as it is very stimulating, it requires to be used at first with caution.†

While emollient ointments, which depend almost entirely upon their oily ingredients for their beneficial effect, are best applied spread upon rags, stimulating ointments should, as a rule, be melted on the point of the finger, and rubbed firmly into the affected part, and none should be allowed to lie undissolved upon the skin, nor, in most instances, should their colour be perceptible after their application; the surface should merely have the appearance of having been recently moistened. The part may occasionally be cleaned with white of egg and soft tepid water (rain water, if possible), for, if layer after layer is smeared upon the skin the ointment becomes rancid, acts as an irritant, and is calculated rather to be prejudicial than otherwise.

It is of the first importance, if ointments are prescribed, that the physician, unless he has perfect confidence in the apothecary who prepares them, should examine them before they are used, for, if they are carelessly prepared, or if they are in the least degree rancid, as happens in innumerable instances, they are very apt to aggravate the symptoms which they were intended to allay. Hence the disrepute into which many valuable ointments have undeservedly fallen.

Astringents are of use in some cases of eczema, such as the sulphate of zinc or copper in proportions varying from 3 to 20 grains in an ounce of rose water, or the solution of the diacetate of lead diluted with distilled water, or Dr. Shoemaker's ointment of the oleate of

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* ℞ Zinci oxydati, ...	pts. 6
Sulphuris præcipitati, ...	,, 4
Terræ siliceæ, ...	,, 2
Adipis benzoati, ...	,, 28

Lege artis terendo misceantur.

Sig., A layer, the thickness of a penny, is spread upon the affected part, and covered with a thin layer of cotton wool.

† ℞ Naphthol, ...	ʒijss.
Sulphuris præcipitati, ...	ʒiss.
Saponis viridis.	
Vaselini, āā, ...	ʒv.

Sig., Apply night and morning. (*Union Medical*, Oct. 12, 1889.)

copper, which is obtained in a manner similar to that of the lead oleate by double decomposition with a saturated solution of copper sulphate. The washed precipitate melted with either 4 or 9 parts of cosmoline, fat, or lard, gives respectively a 10 or 20 per cent. of oleate of copper ointment. Tannic acid ointment (ʒi to the ℥i) is also serviceable, but I rarely use this class of medicaments, believing them to be generally inferior to many others.

Persons who have very tender skins, or who are subject to attacks of eczema, should be careful as to what kind of soap, as well as to what kind of water, they use for washing. All soaps are made from fat which is converted into soap by the process of saponification. The presence of unsaponified alkali in the majority of soaps makes them proportionately irritating, for it has a solvent action upon the oily secretion of the skin which is thus rendered dry, and harsh, and brittle. A perfect soap, therefore, should be absolutely neutral, and, if possible, superfatted. The superfatted soaps of Unna are very excellent preparations, but Vinolia, Molfa, and Cleaver's double-fatty Juvenia soap are more elegant. They are all unirritating, and leave the skin soft, pliant, and comfortable. In chronic eczema in the scaly stage, Unna's double-fatty sulphur, and tar soaps may sometimes be used with advantage.

As already stated, the application of water dressings covered with oil-silk is favourable to the development of eczema, but this remark does not apply to all kinds of impermeable dressings; indeed, in many cases the use of *pure vulcanised india-rubber* (and vulcanised india-rubber cloth) is often of great value in more ways than one. This method of treatment was introduced by Colson, of Beauvais, in the year 1868; in the following year it was adopted by Hardy and Hebra, and I have for a good many years employed it on a very extensive scale and with excellent results. It acts in a variety of ways: it excludes the air, keeps the part warm and at a uniform temperature, and promotes the secretion from the follicles of the skin, which it retains, so that it macerates, and favours the removal of, the epidermis: it also does good in virtue of the sulphur which it contains. It is often one of the best means of removing morbid products, as in the case of eczema impetiginodes of the head, but it does more than this, for in many cases it, unaided, entirely removes the disease. Yet it must be admitted that it is occasionally useless, especially if the surface does not become moist, or even injurious, although we are unable to say beforehand with any certainty in what case it will prove successful or otherwise. The india-rubber coverings should be made so as to fit the affected parts pretty closely but comfortably, and when the patient is unable to use them by day they may still prove of service when employed at night, although not so surely and rapidly; but, if the legs are affected, their application by day, when the patient is going about, is indispensable. If the hands or feet are affected, the india-rubber should take the shape of gloves or stockings; if the head, a nightcap may be made of it; if the whole body is involved, a complete suit of india-rubber underclothing may be worn. For the arms and legs Martin's vulcanised india-rubber bandages are preferable (see treatment of eczema of the legs). These dressings should be removed night and morning and cleansed in tepid water containing a little washing soda; and it is a good thing to puff them occasionally with precipitated sulphur. If the skin is frayed or irritated in any way by their constant use, they may be suspended for a day or two, or the irritated part may be covered with a piece of clean linen spread with one of the soothing ointments already mentioned. Although the india-rubber is apt to be deteriorated by the simultaneous application of other remedies, especially ointments, it is one of the advantages of this method of treatment that, when necessary, it may be combined with any of the other local measures already indicated. The following cases illustrate the value of impermeable dressings:—

Allan M'A., aged forty, hatter, was admitted to the Glasgow Skin Hospital on December 23, 1868. The disease, eczema manuum, had appeared for the first time about three years before this date, and somewhat in the following manner:—He first noticed a number of small "blisters," about the size of pin-heads; these, after remaining a short time, burst, discharging their contents, and leaving a raw surface, which was extremely itchy and "leeted" very much. The eruption appeared first on the dorsal surface of the right hand, then on the sides of the fingers, and lastly on the dorsal surface of the fingers. Shortly after this, a similar eruption appeared on the left hand. The disease lasted a considerable time, and disappeared under medical treatment. The second attack commenced about eight weeks previous to admission, appearing in the same manner and order as before; but this time the palmar surfaces of the fingers were implicated as well as the above-mentioned parts.

The appearances on admission were:—On the left hand the eruption implicated its dorsal surface, as well as the dorsal surfaces and sides of the fingers; these parts were considerably infiltrated, covered with a serous exudation, and were the seat of numerous excoriations. The right hand presented similar appearances, but the infiltration of the skin on its dorsal surface was much more marked. The eruption was extremely itchy, and was rapidly extending. The patient's general health was good. He was ordered to wear a pair of india-rubber gloves constantly for a fortnight.

On January 6, 1869, the disease had in most parts completely disappeared, a faint reddish blush only being left at the sites of the previous eruption. He was ordered to continue the use of the gloves for another fortnight and then to return—which, however, he failed to do. (Reported by Mr. J. D. Walker.)

Louisa W., aged four years and eight months, admitted to the Glasgow Skin Hospital, June 28, 1869. Her father stated that the eruption, eczema capitis, first made its appearance when she was three months old, and disappeared three months thereafter. She remained well till after an attack of scarlatina at the age of a year and a half, when it reappeared, since which time she had never been altogether free of it.

The appearances on admission were as follows:—The eruption implicated the external ears and the whole of the scalp; these parts were very red, much infiltrated, exuded an abundance of clear serum, and were studded with crusts. The patient complained of great irritation of the skin and of burning heat. She looked rather delicate, but her digestive organs were in good order, although the year before she had been troubled with worms. Various remedies had been tried, but to little purpose. She was ordered a vulcanised india-rubber cap, which was to be worn constantly.

On July 15, the crusts, the infiltration of the skin, and the exudation had completely disappeared, the itching and burning heat were almost gone, and a faint red blush was all that remained of the previous eruption. The india-rubber cap was continued. The patient did not return. (Reported by Mr. Robert Sinclair.)

When the eczematous eruption occupies *a limited extent of surface*, when it is very chronic, and especially when the patches assume the form of eczema sclerosum or verrucosum, and when it resists other treatment, it may require to be attacked with strong local applications, while it is not, as a rule, so much under the influence of internal medicines as when it covers a large area. In such cases Unna's salicyl-cannabis or salicyl-creasote plaster mull may be applied, or strong solutions of potassa fusa or chloride of zinc may be employed locally in the manner and with the precautions previously described (p. 174), and often with benefit, but they must be omitted whenever the infiltration of the skin is removed.

Cauterisation with solid nitrate of silver may sometimes be resorted to instead of the above, or the parts may be painted with fluid carbolic acid once or twice a week, or tincture of iodine night and morning, a poultice of bread and hot oil being applied occasionally to hasten the removal of the red skin which forms a covering to the eruption, and prevents the new layers of iodine from coming in contact with the disease itself. In these cases the treatment recommended by Ausspitz[*] may sometimes be adopted with advantage. This consists of rubbing the affected parts with a piece of moist flannel dipped in fine sand, or with sandstone or pumice-stone, until they are reddened and excoriated, after which pix liquida, oleum cadini, or oleum rusci, is well rubbed in, after which they are covered with vulcanised india-rubber cloth; this is repeated once or twice a day, but omitted for a day occasionally, during which time the surfaces may be covered with pieces of linen spread with some soothing ointment, such as diachylon ointment. This treatment, which must be carried out with caution, he considers specially applicable to cases affecting the ears, brow, nape, and extremities, but not to parts, such as the genital organs and face, which are provided with much loose cellular tissue.

In the same class of cases an ointment of *chrysophanic acid* may be tried.[†] The ointment should not be used very strong at first, as some skins are very easily over-irritated by it. The patient should be warned that it stains everything with which it comes in contact, not excluding the hair and nails, and he should be told that, if the surrounding skin assumes a purplish-red colour, or becomes the seat of swelling or burning heat, it should be suspended for a time. If no inflammation results, the ointment may be rubbed in very firmly. When, under this treatment, the patches of eczema disappear, their previous seat will probably be indicated by white surfaces surrounded by skin which has been reddened by the use of the ointment, for the healthy is more likely than the morbid skin to be inflamed by it. Or, instead of chrysophanic acid, a 10 per cent. ointment of *pyrogallic acid*[‡] may be employed, and with the same precautions. It does not stain the skin nearly to the same extent as chrysophanic acid, but on the whole it is not so serviceable as a rule; and under no circumstances should it be applied to an extensive surface, else, as the result of its absorption, it may give rise to constitutional symptoms such as fever, digestive derangement, strangury with greenish-black urine, &c., and may even prove fatal. It must be distinctly understood that the two remedies just mentioned are only to be employed in the class of cases indicated; and, while they are often of use, they are not nearly so certainly effectual as in psoriasis.

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[*] *Ueber die mechanische Behandlung von Hautkrankheiten*, von Professor Heinrich Ausspitz. Wein, 1877. Wilhelm Braumüller.

[†] ℞

Chrysarobin, ...	gr. x.	
Glycerini (Price), ...	ʒi.	
Ung. simplicis, ...	ʒvij.	—*M.*

Sig., Apply night and morning.

[‡] ℞

Pyrogallol,		
Glycerini (Price), āā, ...	ʒi.	
Cerati Galeni, ...	℥i.	—*M.*

Of all the local means for the removal of limited eczematous eruptions, none are superior to *blistering.* This may be done by means of a solution of bichloride of mercury (ʒi to the ℥i of alcohol), the fluid being painted over the eruption, and allowed to dry upon it. There is a certain risk, however, of the absorption of the mercury to such an extent as to produce salivation, so that it should not be used except when the patch of eruption is small, and even then the danger is by no means obviated, as I have witnessed the supervention of salivation under these circumstances.

The best and safest blistering agent is cantharides in some form or another. The preparation which I generally employ is Smith's "emplastrum cantharidinis liquidum." After shaking the bottle a little is poured out and painted over the part; soon after it dries a poultice should be applied for several hours, but the cuticle rarely "rises" so completely as after a common blister. One application is often sufficient to remove the eruption; but, if necessary, it may be repeated weekly, the crust produced by the previous eruption being softened with oil and removed before each reapplication.

Some months ago, a gentleman, aged about thirty-five, and otherwise in perfect health, consulted me with regard to an eczematous eruption on the head of twelve years' duration, for which he had been repeatedly shaved, and had consulted many physicians of eminence. Tar had been applied to the scalp systematically for some time, and every conceivable ointment had been used, but without avail. After his hair was removed, I found that the disease corresponded with the form described under the name of eczema squamosum: it covered the whole head, and, as usually happens in these obstinate cases, was accurately limited to the hairy parts. The scales on the surface were numerous, the itching severe, and on the crown, front, and sides of the head, the infiltration and redness of the skin were great. The worst parts were blistered with cantharides—the fluid requiring to be very freely applied, owing to the thickness of the skin—and the rest of the scalp, which was less severely affected, was painted with tincture of iodine morning and evening. In a fortnight the iodine was omitted, and, when the crusts and scales produced by the iodine and the blistering fluid were removed, the scalp appeared perfectly healthy, and without a vestige of the previous eruption. To consolidate the cure, however, tincture of iodine was painted over the whole head night and morning for a fortnight; and, when the red skin was removed, the scalp looked remarkably well. No other treatment was resorted to, and the gentleman has since been in America. In the interval his hair grew in greater force than ever, and he was delighted to be rid of his old and indefatigable enemy.

Many cases such as these might be mentioned, but I may just refer to one more, which many of my students had an opportunity of seeing. A woman, pretty well advanced in years, came to the Hospital for Skin Diseases, Glasgow, in the spring of 1863, to get advice about an eczematous eruption of old standing, which covered the whole of the palmar surface of each hand. She had likewise a tendency to eczema of the leg, which was removed by means of the "tinctura saponis viridis cum pice," a preparation previously referred to. It is to the hands, however, that I wish to allude. The eruption here assumed the form of eczema rimosum, the fissures being very numerous and deep, and the infiltration of the skin great. Itching was mingled with pain, but the latter, on account of the fissures, predominated. Owing to the pain and stiffness, the hands were kept constantly in a semi-closed position, and she was unable to use them. The application of blistering fluid had a marvellous effect. The eruption disappeared completely, and the patient returned with joy depicted in her countenance, and opened and closed her hands with perfect facility not unmingled with pride.

In *infantile eczema*, we must carry out the same principles of treatment as in the adult. As a rule, however, bearing in mind the tenderness of the skin of young children, and the sensitiveness of their nervous systems, soothing are generally preferable to stimulating applications, and in any case powerful local stimulation is to be avoided. Unna specially favours the application of zinc-ichthyol, or zinc-sulphur salve muslin, or of the "pasta zinci sulphurata."* In chronic cases he advises the application of pyrogallol (1 part), tar (3 parts), tincture guaiac (5 to 10 parts), followed by the use of zinc-ichthyol gelatine (p. 172). A very good remedy, too, is a dilute tar wash, such as ℥ss of liquor carbonis detergens mixed with ℥vi of distilled water, or a mild mercurial ointment may be used, combined with one of the tarry preparations.† Dr. Ricketts recommends the free use of olive oil containing 1 in 50 of carbolic acid several times a day, and when itching is troublesome, with careful attention to diet, and the administration of

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* ℞ Zinci oxydati, ...	pts. 6	
Sulphuris præcipitati, . . .	,, 4	
Terræ siliceæ, ...	,, 2	
Adipis benzoati, ...	,, 28	—*M.*

To which 1 per cent. of sulphide of mercury may be added. It is antiseptic, and also tints the preparation, so that it is not so disfiguring upon uncovered parts.

† ℞ Ung. hydrargyri ammoniati, . .	ʒiss.	
Hydrargyri subchloridi, . . .	gr. v.	
Olei cadini, ...	♏xx.	
Glycerini (Price), ...	ʒi.	
Ung. simplicis, ...	ʒvss.	—*M.*

gr. $\frac{1}{20}$ of calomel every two hours, continued for a month or two. If rapid improvement is not discernible in a few days, he employs an ointment of salicylic acid (gr. x to the ʒi). The diet should be carefully regulated, and, if there is any digestive derangement, an occasional dose of grey powder, or from half a grain to a grain of calomel (for children from nine months to two years old) is often of service. In chronic cases, and when the digestive and other organs are in a satisfactory state, arsenic frequently yields most excellent results, given with the precautions already mentioned. It will thus be seen that my experience is entirely at variance with that of Hebra, who says*—"When it involves the scalp and face, whether of healthy infants or those affected with scrofula, rickets, anæmia, or any other constitutional complaint, the treatment should always be strictly local; for experience has not yet given us any internal medicine which is of the least use in these cases." *In eczema solare* it is of advantage to keep the parts covered up with one of the applications already mentioned (*e.g.*, zinc-ichthyol gelatine), or protected by means of a brown vail, or a soothing brown ointment may be applied :—

℞ Pulv. gum catechu, . . .	gr. xlv.	
Liq. potassæ, ...	ʒi.	
Glycerini (Price), . . .	ʒiij.	
Lanolini, ad	℥ij.	—*M.*

We now pass to the consideration of the last division of the subject—namely, the *local varieties of eczema;* but it must be observed at the outset, that the remarks about to be made are to be taken in connection with what has already been stated, as much needless repetition may thus be avoided.

While eczema may be seen upon any part of the cutaneous envelope, and, indeed, may effect *almost* the whole of it at one time, there are certain localities which it seizes upon in preference to others, and to which it is often limited. These are the head, hairy portions of the face, lips, edges of the eyelids, nostrils, external auditory passages and ears, hands, feet, legs, genitals, anus, breast, umbilicus, flexor surfaces of the joints, and those parts of the skin which are in contact with one another.

Eczema of the head (Eczema capitis, Impetigo capitis) occurs most frequently in the pustular form, especially in the case of children, whose heads are attacked with remarkable frequency, and next to this in the dry squamous form, particularly in chronic cases. When this part is affected, the eruption has a tendency to chronicity, especially if the treatment is not energetically and thoroughly carried into effect, for it is more difficult to keep the surface clean than when non-hairy parts are invaded, owing to the hairs being glued together by the exudation, and to the crusts being entangled in them, and being difficult of removal. For this reason the patient often allows them to remain for weeks or months upon the head, and, when advice is at last obtained, the whole scalp is not unfrequently found to be concealed from view. In this way collections of pus are apt to take place between the crusts and the scalp, owing to the confinement of successive exudations, and to do infinite harm. Besides, when hard crusts are allowed to remain on the head for a lengthened period of time, they press on the hair follicles, and lead to their obliteration; whereas, when the eruption is properly treated from the first, there should be no permanent loss of hair. The crusts are composed not merely of the morbid secretion, but also of the contents of the sebaceous glands, which in this situation are very abundant; and thus, in neglected cases, owing to the products of decomposition, the disease is calculated in an eminent degree, not only to offend the eye, but also the sense of smell. When neglected in the manner just indicated, lice are attracted to the part, and are often detected wallowing in the mire in hundreds, while their nits (eggs) adhere by means of sheaths with great tenacity to the hairs, and in countless numbers. The careless observer is very apt to mistake the scales which are often scattered through the hair for the nits of pediculi, but the latter are smoother and more egg-shaped, and adhere very firmly to the hair. The use of a low power of the microscope would, of course, at once settle the question. (See article on phtheiriasis capitis.) But while lice often occur as complications of an eczematous eruption, we must be alive to the fact that these parasites sometimes attack the head of a healthy person, in whom they excite a sensation of itching. This causes the patient to scratch the part, and an eczematous eruption may thereby be induced. The lice on the head are thus the exciting cause of eczema in some cases, its result in others.

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* "On Diseases of the Skin," by Ferdinand Hebra, M.D. *New Sydenham Society translation*, vol. ii., p. 160.

Little subcutaneous *abscesses* are sometimes met with on the head, especially in children, and enlargement of the neighbouring glands, especially of those on the back of the neck and over the mastoid processes, occur in all aggravated chronic cases.

In the later stages of the disease, when the crusts have fallen and the exudation has ceased, the disease assumes the form of eczema squamosum, the scalp being red, scaly, itchy, and infiltrated. In all cases of old standing the hair falls out to a considerable extent, but the thinning of the hair, with the exception already mentioned, is only temporary, for it grows again as well as ever after the skin affection is removed. The eruption may occur in patches scattered over the head, or the whole of the scalp may be attacked, and often neighbouring parts also, especially the nape of the neck, the mastoid processes, and the ears.

The **diagnosis** of eczema capitis is sometimes difficult to the unaccustomed eye, and I have accordingly arranged in a tubular form the points to be attended to as distinguishing it from the so-called syphilitic eczema capitis, seborrhœa capitis, psoriasis capitis, and tinea tonsurans.

Table showing the points which distinguish eczema capitis from syphilitic eczema capitis, seborrhœa capitis, psoriasis capitis, and tinea tonsurans.

Eczema capitis.	The so-called syphilitic eczema capitis.
1. Occurs oftenest in children.	1. Occurs usually in adults.
2. Often attacks the whole scalp.	2. Usually occurs in small patches.
3. Itching often severe.	3. Usually absent.
4. Exhibits superficial ulcers only, if any.	4. May exhibit deep ulcers, with perpendicular edges, and unhealthy bases.
5. Occurs in persons in whom there is no history of primary syphilis, except as a coincidence.	5. Occurs in persons from whom a history of primary syphilis may be obtained.
6. Does not occur in connection with symptoms of syphilis, except as a coincidence.	6. Occurs usually in connection with other signs of syphilis—*e.g.*, alopecia, sore throat, other syphilitic eruptions on the skin, nocturnal pains, &c.

Eczema capitis.	Seborrhœa capitis.
1. Exhibits crusts, which are brittle, often very thick, and composed of pus, granular matter, and epithelium.	1. Exhibits crusts, which can be kneaded into a ball, are usually thin, have an oily feeling, and are composed principally of sebaceous matter and epithelium.
2. Is excessively itchy ; and, after removing the crusts, the scalp is found to be infiltrated, red, often excoriated, and exudes serum or pus.	2. Is not excessively itchy ; and, after removing the crusts, the scalp is not infiltrated nor excoriated, exudes neither serum nor pus, but is smooth and oily.

Eczema capitis.	Psoriasis capitis.
1. Occurs oftenest in those whose health is below par.	1. Occurs oftenest in those who are apparently in robust health and who are well nourished.
2. Edges of patches not abrupt, but gradually shading off into the healthy skin.	2. Edges of patches abrupt.
3. Is usually very itchy.	3. Is usually not very itchy.
4. Often moist and exuding.	4. Is, with rare exceptions, a perfectly dry eruption throughout.
5. Exhibits thick, yellowish, usually moist crusts, or, if scaly, the scales are looser and not silvery.	5. Exhibits usually white, dry, silvery, adherent scales.
6. Occurs often in connection with eczema of other parts, as of the ears, &c.	6. Occurs generally in connection with psoriasis of other parts, especially of elbows and knees, where the diagnosis is easy.

Eczema capitis.	Tinea tonsurans.
1. Patches not circular, although the hair is often cut short in a circular manner with scissors.	1. Patches often circular.
2. Hairs healthy (though they may fall out here and there), and exhibit no parasite.	2. Hairs often brittle; twisted, or broken off close to the scalp; thickened and often white; loaded with the parasite (trichophyton tonsurans).
3. Itching usually great.	3. Itching usually slight.
4. Eczematous eruptions often on other parts of the body.	4. Tinea circinata often present on the body.
5. Not contagious.	5. Contagious, especially to children; and often other members of the family exhibit ringworm of the head, body, or beard.

Cases are frequently met with in which ringworm is complicated with eczema of the head. The latter is then the more prominent feature of the two, and the ringworm is apt to be overlooked. In these cases the diagnosis is arrived at by detecting the white or black thickened stumps of hairs loaded with the parasite. It is therefore well, in every case of eczema, to examine the hairs carefully with the eye at least. The history of the case, the way the eruption commenced (in circular dry patches), and the evidences of contagion assist the diagnosis. The following case is a good example of the complication of ringworm of the head with eczema :—

Richard B., aged eight, was admitted at the Glasgow Hospital for Skin Diseases, Nov. 25, 1861. Almost the whole of his head was covered with thick, yellow, eczematous crusts, and the backs of his ears were infiltrated, exuding, and itchy. Little patches of alopecia existed on the scalp, and, on examining the head attentively, stumps of hairs were detected here and there, which were brittle, broke on attempting to extract them entire, and were loaded with the spores of the trichophyton. The disease commenced as a small circular patch on the crown of the head, having, according to the statements of the mother of the patient, all the characters of ringworm.

Alopecia areata (circular patches of baldness) ought never to be mistaken for eczema of the head, and the disease only requires to be kept in mind in order to prevent an error in diagnosis.

Tinea favosa is, however, often difficult of distinction unless due care is taken. In cases of favus where the head is more or less covered with an eruption exhaling the odour of mice, and consisting of bright-yellow, dry crusts, depressed in the centre, through the middle of each of which one or more hairs pass, which have a dull dry appearance, and are more easily extracted than natural, the diagnosis is very easy, and those who have seen the disease once can never mistake it. When, however, it has continued for a length of time, when the crusts have lost their cup-shaped form and their bright yellow colour, and have become entangled in the hair, when, in fact, we have to do with the variety described as favus squarrosa, it may be—and often is—mistaken for impetigo of the scalp. But in the former the edges of the patches are abrupt, and there are generally patches of alopecia which are wanting in the latter; in it certainly the hairs often fall out, although only here and there, and not in patches as in favus. The alopecia of favus is permanent, that of impetigo generally temporary. There is also no alteration of the hairs in the latter, in the former they are dull, dry, brittle, discoloured, and easily extracted. Attention to these points generally serves to clear up the diagnosis: but if doubt still exists, it may at once be removed by the microscopic examination of the hair and crusts. There is one point, however, which requires to be borne in mind, namely, that the discovery of some pustules does not prove that the disease is impetigo, as pustules are frequently developed in cases of favus from the irritation of the parasite, or of the treatment, or of the scratching in which the patient indulges. And also, one should not lay too great stress on the value, in a diagnostic point of view, of the mouse-like odour exhaled from the eruption in favus, as this symptom is not always pathognomonic.

Very often the diagnosis is rendered difficult on account of the propensity of patients to clean carefully, and remove all the crusts before bringing their children for advice. There is then to be seen redness of the scalp combined with the presence of a few pustules, the result of irritation; and here again the disease resembles impetigo. But, if it is a case of favus which we have before us, the deep red, depressed, distinctly circumscribed surface, covered by a thin, shining epidermis, is quite different from the light-coloured, diffused redness of impetigo. If this is not sufficient, the hairs should be examined, when they will be found to be altered, and the parasite will be detected in them with the microscope. If this is not satisfactory, do not give an opinion, or resort to any treatment, but desire the patient to return in a couple of weeks, leaving the head untouched in the *interim*, after which time the disease will have had time to redevelop, and its nature is at once discovered.

In the **treatment** of eczema of the head, the removal of the crusts is often more difficult than on non-hairy parts, particularly when the hair is long: but it is not necessary, nor, as a rule, is it desirable, to shave the head, as is so often done; the means already described for the removal of desiccated exudation being amply sufficient, even when the head is the seat of the disease. But, if it occurs in an aggravated form in children, in whom the removal of the hair is comparatively of little moment, I am in the habit of ordering it to be cut short; and I always insist upon this if—as happens too often, particularly amongst the poor—the disease is complicated with lice. The crusts can then be separated with greater facility, the morbid surface is more fully exposed to view, and remedial applications can be more thoroughly applied. A very good way of removing the crusts is to soak the head with fresh almond oil (to which a little eucalyptus oil may be added to prevent decomposition), and afterwards to envelope it in a flannel cap, a method of treatment which also favours the removal of the eruption in many instances (Hebra). In all stages of the disease a vulcanised india-rubber cap may be worn, which not only removes the crusts, but often cures the disease, especially if there is much moisture following its application. (For particulars see p. 182.)

The use of one of the tarry preparations already mentioned is specially to be recommended in chronic cases, for, as Hebra has remarked, "the treatment by tar is nowhere so useful as in eczema of the scalp;" but it must be used freely and brought thoroughly into contact with the skin. In chronic cases, occurring in adults, and rebellious to all other treatment, shaving of the head, and the application of salicylic plaster (see treatment of eczema pilare faciei), or of iodine or blisters (p. 186) may be tried.

Eczema *of the hairy portions of the face* (eczema pilare faciei—sycosis non-parasitica—folliculitis barbæ—acne mentagra—impetigo menti) is an exceedingly common and a very annoying affection, owing to the disfigurement which it occasions, the burning heat which accompanies it, and the difficulty and pain of shaving. It is by no means confined to the hairy portions of the face, although the upper lip, edges of the nostrils, and region of the whiskers and beard are oftenest invaded, for it occasionally occurs in the axillæ, pubis, and head.

The eruption commences by the formation of pustules, each of which is situated at the orifice of a hair follicle, for it will be noticed that a hair passes through the centre of each. It is curious that eczema almost always assumes the pustular form in this situation in adult males—an observation which coincides with what has been previously stated, that the pustular form of eczema (impetigo) is much more frequently observed on hairy than on non-hairy parts.

These pustules dry up into small, yellow crusts, which are difficult of removal, owing to their adhesion to the hairs as well as to the skin. When many pustules form at the orifices of neighbouring follicles, they have a tendency to run together; and, on drying up, large irregular yellow crusts are left. If these are not removed, successive exudations on the surface of the skin are confined by them, and lead to excoriations, and occasionally, owing to their continued pressure, to obliteration of the hair follicles, and permanent alopecia of the affected parts. The skin, on which the pustules are developed, assumes a dusky red tint, and becomes gradually more and more thickened and infiltrated. The patient sometimes complains of itching, oftener of pain or burning heat—a sensation which is principally experienced during the formation of a crop of pustules, and the disease is often kept up for months, or even years, owing to the occurrence of successive crops. In chronic cases the pustular formation sometimes ceases, and the eruption then partakes of the characters of eczema squamosum (see p. 120). When it occurs in strumous subjects, the surface has a tendency to assume more or less of a violet tint; the affection is then exceedingly chronic, and destruction of the hair follicles and permanent alopecia are much more certain to occur. (Lupoid sycosis (Milton); Ulerythema sycosiforme (Unna).) These three features, when markedly present, indicate the necessity for the persevering use of anti-strumous remedies.

The causes, which specially operate in the production of this form of eczema, are irritating discharges from the nose and mouth and the irritation of blunt razors. Indeed, the disease may even disappear spontaneously, when these causes are no longer in operation, if the predisposition to eczema is not very strong, and the eruption is not of long standing.

Pus cocci (staphylococcus aureus et albus) are formed in the purulent secretion, but it is doubtful whether they can be regarded as the cause of the disease. Tommasoli and Unna have described a comparatively rare form of this affection dependent upon the presence of a bacillus. "The bacilli" are "short rods, somewhat thick, with rounded ends, elliptical in form. . . . They grow most rapidly and characteristically upon potatoes as a thick, yellow, mucoid growth, which spreads a very unpleasant odour, and around which the potato assumes a dark green colour." (Unna.) The name of bacillus sycosiferus fœtidus has been given to it by these observers.

The symptoms are somewhat similar to those of a slight attack of the common form of the disease. "The tubercular folliculitis attacks chiefly the upper portion of the hair-bulb; it suppurates but sparingly in the follicle of the hair-bulb; the interfollicular coat shows a strong erythema, but less swelling and infiltration" than in the other form of the disease.* The course is chronic, but does not lead to suppuration and scarring.

The disease which is oftenest confounded with this form of eczema is tinea sycosis, although the differences are generally very marked. The following are the points of distinction :—

Eczema pilare faciei.	Tinea sycosis (Sycosis parasitica).
1. Very common.	1. Not so common (but by no means so rare as many suppose).
2. Pustules only.	2. Pustules, tubercles, and large fleshy indurations detected when disease fully established.
3. No trace of tinea circinata, either on the affected parts or in other localities.	3. Rings of tinea circinata sometimes detected among the hairs and round the front of the neck, on the wrists, arms, or other parts of the body.
4. Not contagious.	4. Contagious, and history of a "foul shave," or of ringworm of the head or body in other members of the family.
5. Hairs healthy, and adhere firmly, so that epilation causes pain, unless much suppuration has occurred at their roots.	5. Hairs brittle, broken, or twisted; have lost their natural glistening appearance, are thick and at times white; many of them can be extracted with perfect ease and without pain, and come away without their bulbs.
6. No parasite to be detected.	6. Fungus (the tricophyton) detected in some of the hairs and scales.

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* Dr. P. G. Unna, *St. Louis Med. and Surg. Journ.*, Aug., 1889.

In the **treatment** of this form of eczema, it must be borne in mind that it is generally a tedious complaint at the best, so that much perseverance is required, although the ultimate result is satisfactory, and that strong local stimulants, such as the empyreumatic oils, are generally the reverse of useful. In fact, the local treatment should often be carried out pretty much in accordance with the principles laid down in connection with acute eczematous eruptions. And yet it will generally be found that shaving the parts thoroughly every day is a necessary adjunct to other treatment, many cases yielding, when it is resorted to, which had previously resisted other remedies.

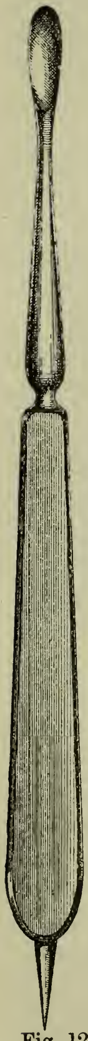

Fig. 12.

If the eruption is much crusted, or acutely inflamed, it may be well, before shaving, to cut the hair short, and to apply on pieces of linen one of the soothing ointments, alluded to at p. 169, in the first instance. Sometimes, by continuing this treatment perseveringly, a cure may be effected, but, if not, a little sulphur (ʒss to the ℥i) may be added, while the part is shaved daily.

One of the most effective methods of treatment is to keep the parts covered with Unna's emplastrum salicylici; or empl. hydr. oxidi zinci, acidi carbolici, et hydr. perchloridi; or empl. hydr. et carbolici, which may be changed daily; but, if irritation of the skin ensues, the plaster may be suspended for a time, the parts being dressed with pieces of linen spread with a soothing ointment.

The scoops devised by Ausspitz, of Vienna (Fig. 12), are of great service. After shaving and applying linen spread with diachylon ointment, for several days, the most prominent pustules are opened with the conical point, and then the whole surface is firmly scraped with the scoop, so as to remove all pustules, crusts, &c. This process is repeated several times a week, the parts being kept covered continually, in the intervals, with the ointment. In this way, brilliant cures are often effected.

If, after a persevering trial of the means of cure just indicated, a satisfactory result is not obtained, all the hairs proceeding from the affected parts may be extracted, and a stimulating ointment, such as citrine ointment, applied, night and morning, to the affected surface. This treatment occasionally acts like a charm, and old-standing cases are sometimes cured in a few weeks by means of it: even although it often fails to effect a complete cure, it is generally productive of temporary benefit. After the parts have been once epilated, if new pustules appear, the hair passing through the middle of each must at once be extracted and the use of the ointment continued.

The following case illustrates the benefit of this mode of treatment:—

Mr. M., aged about thirty-five, consulted me on April 24, 1861, with regard to an eruption on the upper lip, immediately beneath the nostrils. The patch was about an inch square, the skin was red and infiltrated, and numerous pustules and yellow crusts were situated at the orifices of the hair follicles. The disease was kept up by the formation of successive crops of pustules. He stated that he frequently had a discharge from the nostrils, which, he thought, irritated the skin of the upper lip. He had been taking Donovan's solution for some time when I saw him and, he said, with benefit: it was therefore continued.

A week afterwards, the eruption being in no way altered, Fowler's solution, at first in 10, later in 15, drop doses (thrice daily), was administered for some weeks, and an ointment of 2 drachms of citrine ointment, mixed with 6 of linimentum calcis, was applied night and morning. The arsenic, in one form or another, having been continued for a couple of months, and no benefit accruing from its employment, was omitted, and the morbid surface was touched gently with solid potassa fusa, after the removal of the crusts.

A week afterwards (May 11, 1861) great improvement was observed. The infiltration and redness of the skin were much less; but still a few pustules continued to form at the edges of the patch.

The patient was now lost sight of till January 23, 1862, when the eruption was found to be pretty much in the same state as when he was first seen, it having never disappeared entirely. I at once removed the crusts, extracted all the hairs, and ordered citrine ointment to be used night and morning.

Four days later (January 27, 1862), the infiltration and redness of the skin were nearly gone, and no new pustules had appeared. He was ordered to continue the use of the ointment a little longer, and, if any new pustules appeared, to pull out the hairs which proceeded through the centres of them.

About two months after this (March 21) I saw this gentleman, by accident, when he informed me that, since the epilation, the disease had never reappeared, and no trace of the previous eruption could be discovered. He wore a magnificent moustache—epilation, as most are aware, having the effect of making the hair grow more luxuriantly than ever, owing to the stimulus which that operation gives to the circulation of the part. It may be as well to remark that epilation is only to be employed in *very exceptional* cases, which have resisted all other methods of treatment, and that there is not nearly the same certainty of its doing good as in the case of ringworm of the beard.

In strumous cases, the best results are to be expected from the use of cod-liver oil, in full doses (2 or 3 ounces per day), combined with the continuous application of the oil to the affected surface.

Eczema of the lips (Eczema labiorum) is by no means of rare occurrence, and may coincide with a similar eruption on other parts, though they are often affected alone. The eruption may be confined to one lip, or both may be implicated, and they may be the seat of any of the forms of eczema previously described, the exuding and squamous varieties being the most common. They are often greatly swelled, the serum being diffused through the cellular tissue, the meshes of which are very loose. The oral aperture is often spasmodically contracted, especially if fissures complicate the eruption, as they sometimes do, particularly at the angle of the mouth and the centre of the lower lip; and, when the parts are the seat of exudation, the lips may be found glued together when the patient wakens in the morning.

Hebra has observed eczema of the lips to be frequently associated with eczema of the anus, and he once had a patient whose anus and lips were alternately implicated.

The two diseases which are most apt to be mistaken for eczema of the lips are herpes labialis and syphilitic eruptions of these parts; but one will be little likely to fall into error, if the points already referred to, in speaking of the diagnosis of eczema in general, are remembered. There is just one additional circumstance, however, with which it is necessary to be familiar in connection with syphilitic affections of the lips, namely, that the eruption rarely affects the whole of even one lip; but has a marked tendency to concentrate itself, in the shape of elevated patches (condylomata) and fissures, at the angles of the mouth, where it is often obstinate, till the patient is brought under the influence of mercury, when it, " vanquished, quits the field."

Care must be taken in the use of strong solutions of poisonous preparations, such as those of corrosive sublimate, in the treatment of this affection, for it is quite possible for the patient to swallow a sufficiency of the mixture to induce serious symptoms. I have nothing to add with regard to treatment, further than to refer particularly to the remarks already made upon the means appropriate for the removal of limited eczematous eruptions (p. 184), and to remind the reader that eczema of these parts frequently occurs as a manifestation of the strumous diathesis, or in connection with symptoms of digestive derangement, which must therefore be carefully inquired for and removed.

The following is a good illustration of the eruption in question :—

A gentleman, aged about thirty-five, came for consultation on April 15, 1861, on account of an eruption of eczema attacking both lips, and for the second time. A small infiltrated, exuding, and itchy patch existed on the right cheek, near the angle of the mouth, and occasionally vesicles were detected on it. The lips were slightly infiltrated, thickened, red, and itchy; the epithelium was constantly peeling off them, so that they were very rough, and sometimes a little serous fluid exuded, while fissures had formed here and there, but particularly at the angles of the mouth. His general health was excellent. Fowler's and Donovan's solutions were successively administered without effect, and the disease was finally and rapidly cured by applying liquor potassæ to the parts night and morning, and washing them frequently with cold water.

Eczema of the edges of the eyelids (Eczema tarsi, Tinea ciliorum) is exceedingly common, especially in scrofulous children, and is often associated with conjunctivitis and strumous ophthalmia. The affection is neither more nor less than a pustular eczema (impetigo), attacking the edges of the lids (like that which so often attacks the beard, and with which it may be associated), although it does not seem to be always recognised as such by ophthalmic surgeons; for it commences by the formation of pustules at the orifices of the hair follicles, which concrete into scabs, beneath which the parts are found to be excoriated; or small ulcers are detected; and, when the disease is fully developed, the usual symptoms of eczema—redness, swelling, itching, infiltration, exudation, &c., are observed. The exudation from the morbid surface, mingled with the altered secretion from the Meibomian glands, not only glues the neighbouring hairs, but also the edges of the eyelids, together, especially at night, unless proper precautions are taken. Lachrymation is likewise a common symptom, and the tears, falling on the cheek, not unfrequently irritate the skin, and may give rise to an eczematous eruption.

If improperly treated or neglected, as occurs too often, the pressure of the crusts, the confinement of the discharge, and the formation and extension of ulcers, lead ultimately to obliteration of the hair follicles, after which a perfect cure is of course impossible. Amongst the train of evils may also be mentioned inversion or eversion of the eyelids; and, if the eyelashes are not gone, owing to obliteration of their follicles, the hairs are apt to assume abnormal directions.

In exceptional cases pediculi (*pediculus pubis*) attack the eyelids: the parts become itchy, and the scratching irritates and inflames the edges of the lids, thus giving rise to an appearance like that of the affection under consideration; but the discovery of the nits adhering to the hairs, or of the pediculi clinging to them close to the surface, should prevent error.

With regard to the local **treatment** the extraction of the eyelashes is always followed by improvement. This operation is far too often omitted, for in my opinion it should be uniformly carried into effect in bad cases, when cutting away the hair has failed, and repeated, if new pustules form at the orifices of the follicles, exactly in the same way as in the treatment of obstinate cases of eczema of the beard. If the parts are much infiltrated, it is sometimes useful, after the removal of all crusts, to apply a solution of potassa fusa (usually a solution of 10 grains in an ounce of water) to the edges of the lids, an operation which should not be intrusted to the patient, at first at all events. A small brush must be used, and very little of the solution taken up by it, so as to moisten the surface, but no more. The eyelid must first be carefully dried (else the application spreads), everted so as to remove it from the eyeball, and the solution is then painted along its edge. A large brush soaked in cold water should be in readiness, to stop the action when desired. This application may be repeated every day till the infiltration, exudation, and itching subside, after which Startin's red ointment (p. 180), or one of the soothing ointments already mentioned, may be relied upon for completing the cure. In slight cases the eruption often yields to the use of very mildly stimulating ointments alone, coupled with cleanliness, and in all cases, during the treatment, a little ointment should be applied to the edges of the lids at night, so as to prevent their adhesion, and removed in the morning. If, notwithstanding the annointing of the lids at night, they are adherent in the morning, they must on no account be torn asunder, but the agglutinated matter must be softened. For this purpose, says Mackenzie, "a teaspoonful of milk, with a bit of fresh butter melted in it, may be employed for smearing the lids, rubbing it with the finger gently along the agglutinated eyelashes. A piece of soft sponge, wrung out of hot water, is then to be held upon the eyelids for some minutes, after which the patient will find the eyelids yield without pain to the least effort he makes to open them. With the finger-nail the whole of the matter is immediately to be removed." [*]

If there is any inflammation of the conjunctiva, Mackenzie's excellent wash of the bichloride of mercury[†] may be used with advantage, and is

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[*] *A Practical Treatise on the Diseases of the Eye*, by W. Mackenzie, M.D. Fourth Edition, p. 145.

[†]

℞ Hydrargyri bichloridi,	gr. i.
Ammoniæ hydrochloratis,	gr. vi.
Extracti belladonnæ,	gr. x.
Cocci cacti,	gr. iss.
Alcoholis,	ʒi.

Tere simul, adde aquæ uncias sex, et cola per chartam.

Sig., Pour out half a table spoonful of this fluid, and mix it with as much boiling water in a teacup previously warmed. With a piece of old linen or soft sponge bathe the eyelids with the mixture for a few minutes, and then, by leaning back the head, allow a little of it to flow in upon the eye. Repeat this thrice daily.

often sufficient, when the conjunctivitis is slight. For the treatment of a more severe attack, as well as for that of the other complications of eczema tarsi, such as ectropium, entropium, trichiasis, ophthalmia scrofulosa, &c., the reader should refer to special works on ophthalmic surgery. These cases are most often met with in the subjects of the strumous diathesis, a point which must be kept in view in connection with the constitutional treatment.

Eczema of the nostrils (Eczema narium) is not at all uncommon: it is very apt to follow attacks of scarlet fever, and often exists alone. There is no itching complained of in this affection, except at the point where the mucous membrane of the nostrils takes on the cutaneous character, the mucous membrane being, as a rule, unaffected by pruritus. The nose is often much increased in size. The secretion from the nostrils is likewise much augmented, becomes thick and purulent, and concretes into crusts, so as to impair the nasal respiration, to cause the patient to sleep with the mouth open, and to snore.

On removing the crusts, the mucous membrane is found to be thickened and congested, and ulcers form with considerable frequency. The patient feels the nostril very much stuffed, and is thereby induced to remove the crusts which cover the ulceration. This has the effect of increasing the size of the sores, especially if the general health is not good, and, in rare cases, the ulceration produces perforation of the cartilaginous septum; but I have never seen the bony septum attacked, nor any external deformity produced.

The differential diagnosis of eczema of the nostrils from *lupus* is sometimes difficult, especially in those rare cases of eczema in which perforation of the septum occurs, for lupus not unfrequently commences its ravages by perforating the cartilaginous septum. But, if the disease is lupoid, it is much more chronic, there is no itching at the orifices of the nostrils, and some of the characteristic nodules are usually discovered on the skin of the nose or neighbourhood, which, when present, at once point to the nature of the perforation. In eczema of the nostrils, on the other hand, there is often an eczematous rash externally, or the history of one. And, lastly, while eczema may occur in strumous persons, lupus is much more frequently accompanied by other signs of struma, such as enlargement or suppuration of the glands at the side of the neck, caries, &c., or it occurs in those with a hereditary tendency to strumous affections.

Syphilitic affections of the nostrils may likewise be mistaken for eczema of these parts. But in the former there is no itching at the junction of the mucous membrane with the skin; there are often syphilitic eruptions on the skin, or other symptoms of syphilis, such as alopecia, sore throat, glandular enlargements, nocturnal rheumatism,

&c.: there is often the history of a primary syphilitic sore, and, lastly, the affection yields to mercury and iodine.

I have very little to add with regard to **treatment.** *Very mild* stimulating ointments containing mercury, as white precipitate ointment diluted with 8 parts of lard, or very weak citrine ointment, are usually beneficial. Hebra recommends a strong solution of sulphate of zinc, which may, therefore, be tried in preference to solutions of potassa fusa; or, when the eruption is located high up in the nasal cavity, astringent bougies * may be used, as recommended by Neumann, or a small plug, enveloped in a strip of zinc-ichthyol salve muslin, may be inserted into each nostril, or Shoemaker's oleate of zinc powder may be tried in the form of snuff. Others are in the habit of using nitrate of silver either in solution or in the solid form. The patient must be warned most particularly not to tear away the crusts, but to soften them carefully with oil, and after they come away to smear the ulcerated surface with one of the ointments just mentioned.

Eczema of the auricle (Eczema aurium) is frequently observed, and may be limited to certain portions of it, or may implicate the whole ear. It not unfrequently happens that an eczematous rash is limited to the lobule, being called forth by the irritation of earrings. In other cases the disease is limited to those parts of the concha which are in the immediate vicinity of the meatus, in which case the latter is usually likewise the seat of eruption. In a third class of cases it is limited to the back of the auricle, to that part of it, namely, which lies in contact with the mastoid process (eczema intertrigo); and in a large proportion of cases of eczema of the head this part is implicated.

When the whole auricle is invaded, the parts in typical cases, are often excessively swollen, and the natural form of the ear is much distorted; not only so, but the position of the ear is altered, being carried forward from the mastoid process, so that it projects from the head in a peculiar manner. The exudation, too, is often very abundant, and concretes into scabs, which fill up the hollows and depressions of the auricle, and may hang from the lobule like icicles.

Eczema of the external auditory passage (Eczema meatûs) occurs on both sides simultaneously in the great majority of cases, though sometimes only one ear is attacked, or one more than the other. In most instances the auricles are implicated, the disease commencing on the skin of these parts and gradually extending inwards, or *vice versâ;* but the eruption is not unfrequently limited to the meatus. As these cases are more frequently brought under the notice of the aural surgeon, the physician is apt to have erroneous notions as to their frequency.

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* ℞ Zinci oxidi, ...	gr. ij.
Butyri cacao, ...	gr. xvi. —*M.*

It may arise from the same causes which call forth the eruptions on other parts of the body, but the local causes specially operating are the introduction of pins, ear-picks, and acrid substances into the meatus. The patient sometimes complains of a feeling of fulness in the ear; but the itching is the most annoying symptom, to allay which ingenious varieties of ear-picks are frequently introduced, so as to scratch the parts—the finger-nails, which are employed for a like purpose on other parts of the body being inadmissable. In this way the irritation is relieved for the moment, and the disease proportionally aggravated. The calibre of the meatus is narrowed, often so much so that the membrane of the tympanum cannot be distinctly seen, the amount of the narrowing being dependent upon the amount of infiltration of its walls. There is often exudation from the meatus at some stage of the disease, and the fluid which exudes is either purulent or serous, and sometimes so excessive as almost to soak the pillow at night. If the ear is not frequently washed out, the exudation has a very offensive odour. At other times the meatus is quite dry and scaly, and in connection with this condition I have frequently observed the surface of the membrane of the tympanum to be dry and scaly also. Sometimes large quantities of epithelium are thrown off from the meatus, so as to block it up, and cerumen is often mixed up with the epithelial *débris.* The secretion from the ceruminous glands is, however, for the most part defective or arrested in this affection. The hearing power is often not much impaired, the amount of deafness depending upon the amount of infiltration of the walls of the canal, upon the quantity of epithelium and discharge accumulated in the meatus, and upon whether the tympanic membrane and mucous membrane of the cavity of the tympanum are implicated or not. Sometimes the deafness is so great that the tick of the watch is only heard when it is close to the ear.

The patient often complains, not only of deafness and itchiness, but also of a sense of uneasiness and fulness in the ears, of tinnitus and even giddiness. These last symptoms may arise from various causes: but, in uncomplicated cases, are doubtless due to the epithelial *débris*, &c., impinging upon the tympanic membrane, thus driving the ossicles inwards and inducing intra-auricular pressure; for, as is well known, pressure upon the internal ear produces symptoms analogous in many respects to those induced by pressure upon the brain. Not uncommonly as the result, it may be, of the use of ear-picks, &c., the case is complicated by the formation of furunculi, which are often very painful.

The **treatment** occasionally requires patience and perseverance, as it is impossible to apply local remedies so satisfactorily to the meatus as to the skin; and strong local applications must be used with caution, on account of the delicate structures at the bottom of the meatus.

The ear must first be carefully syringed, so as to remove the exudation, epithelial *débris*, &c., and, when the walls of the canal, instead of exuding, are scaly, a few drops of almond oil or bicarbonate of soda lotion (ʒss to the ℥i) should be previously introduced for a day or two, so as to soften the particles, and facilitate their subsequent removal. The relief and improvement of hearing following upon the use of the syringe is often so great as to astonish the patient, who has allowed the exudation and particles of skin to collect in the ear for weeks or even months. After all the *effete* matter has thus been removed, the walls of the meatus may be painted with solutions of potassa fusa or chloride of zinc (commencing usually with a solution of 5 grains in an ounce of water, but the strength must be proportioned to the severity of the disease). A small paint-brush is dipped in the solution and gently pressed, so that it does not contain too much fluid, then insinuated into the meatus, to the extent of half an inch, and twisted round, so that the walls of the canal are entirely moistened by the fluid. This usually causes considerable smarting, which, however, subsides in a few minutes. If the action is severe, it may be checked at once by the injection of tepid water, for which purpose it is well, previous to the operation, to fill a syringe with this, and hold it in readiness for use, if required. If a strong solution is used (*e.g.*, ʒss to the ℥i), we must be very careful not to take up so much fluid with the brush that it drops upon the tympanic membrane, as such applications, which may be appropriate for the walls of the canal, cannot be applied with impunity to the delicate structures at the bottom of the meatus. In cases where the tympanic membrane participates in the disease, as usually happens, a weak solution (*e.g.*, potassa fusa, gr. i, to ℥i of water) may be used as an injection night and morning, which is sufficiently strong to improve its diseased condition in most cases. A strong solution (ʒss to ℥i of water) may usually be painted on the walls of the meatus once or twice a week; but the more severe the affection, and the weaker the application, the oftener must it be repeated, and the more freely may it be used. In the intervals between the applications—which should never be trusted to the patient, if the solution is strong—we may direct him to syringe the ear twice daily with a weak tepid solution of boracic acid, or of zinc sulphate and carbolic acid.* The beneficial effects of this treatment are sometimes very marked; the hearing often improves after a single application, the uneasiness in the ear subsides, the meatus becomes wider, and a large quantity of serous fluid exudes.

* ℞ Acidi carbolici cryst.,	
Zinci sulphatis, āā, ...	gr. xij.
Glycerini, ...	ʒiij.
Aquæ rosæ, ad	℥xij. —*M.*

The following case illustrates what has just been stated:—

G. T., Esq., aged about forty-five, consulted me, January 10, 1862, for an affection of the ears, of two years' duration. He complained of tinnitus, uneasiness, and fulness in the ear, with severe itching, to allay which he was in the habit of using an ear-pick. Sometimes a profuse watery discharge, mingled with epithelial *débris*, came away from the ears, sometimes small scales only. He had latterly been troubled with deafness on the right side, the tick of the watch being heard at the distance of two inches and a quarter from the ear. An eczematous eruption was seen on the concha; the meatus was much narrowed, red, and scaly, and the membrana tympani dull and scaly, giving it a very peculiar aspect. On the left side the same symptoms existed, though in a less marked degree; but the hearing was good. The membrane of the right tympanum was relaxed and had fallen inwards somewhat, as it was seen to move outwards, and the hearing improved on forcing air into the cavity of the tympanum. To remove this condition, I touched the tympanic membrane with a solution of nitrate of silver (gr. x to ℥i of water), and on the 14th the relaxation was nearly gone, and the tick of the watch was heard at the distance of a foot. I now painted each meatus, after cleansing it with the syringe and warm water, with a solution of potassa fusa (ʒi to ℥i of water), in the manner above described. This was repeated on the 16th, and again upon the 18th, when the tick of the watch was heard at the distance of a yard from the right ear; the hearing in the left continued good; the itching, sense of fulness, and tinnitus were gone; the meatuses were wider and more natural in appearance, and the membranes not so scaly. This application was repeated a good many times, and the canals washed out with tepid water twice daily in the intervals, with the most beneficial effect.*

It will often be found that benefit accrues from the use of a solution of nitrate of silver, in the proportion of 10 grains to the ounce of water, which may be painted every week over the meatus, in the same way as the potassa fusa solutions. It occasionally happens, however, that such a solution acts more powerfully than is intended, and produces pain, swelling of the meatus, and other disagreeable symptoms; but these usually subside in a few days under soothing treatment, and improvement of the primary complaint is the common result.

As an instance of the good effects of this treatment, the case of a lady whom I saw in consultation with my colleague, Professor J. B. Cowan, may be mentioned. She had suffered for some time from an eczematous rash of each ear, which had extended to the meatus and membrana tympani. The eruption, when I first saw it, was red, infiltrated, dry, and scaly, and much itching was complained of. There was likewise a sense of fulness, as well as of itching, in each meatus, and the membranes participated (in the manner before indicated) in the eruption. The tick was heard, when the watch was at the distance of one inch from the right ear; but was only faintly audible, when pressed *firmly* against the left. It was audible, though not very distinctly, on the temples. The ears were washed out night and morning with warm water, and each meatus was painted every second day with a solution of nitrate of silver (ʒss to the ℥i of water). A mixture containing oil of cade, rectified spirits, and a few grains of potassa fusa,* was rubbed firmly over the external eruption night and morning, and washed off with petroleum soap and water before each reapplication.

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* See "Cases Illustrative of Diseases of the Ear." By T. M'Call Anderson, M.D. No. II. *Glasgow Med. Journ.*, Apr., 1863.

This was on December 23, 1862. On January 6, the report was as follows:—Tick of the watch heard at the distance of eight inches from the ear on the right side, quarter of an inch on the left. Meatuses more natural in appearance. External eruption nearly gone. Apply the lotion in the morning only, and at night rub a little citrine ointment over the parts. Paint each meatus with the nitrate of silver solution once every three days only.

On January 29, 1863, the external eruption had disappeared; the meatuses and membranes were comparatively healthy in appearance, all uneasiness was gone, and the watch was heard ticking at the distance of more than a yard from each ear. I now recommended a course of Fowler's solution, to prevent a relapse, if possible, the painting of each meatus once weekly with the solution, and the use of citrine ointment externally once daily.

After the infiltration of the meatus is moderated or removed, much benefit is sometimes derived from injections of tar water or of a weak emulsion of liquor carbonis detergens with water,† or from painting the canal daily with the undiluted liquor or with a little melted citrine ointment, care being taken to use the syringe and warm water before each reapplication of the ointment. Or, in order to bring the salve into contact with the whole canal, and to dilate the passage when it is

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* ℞ Potassæ fusæ, ...	gr. xv.
Olei cadini, ...	℥i.
Alcoholis, ...	℥iss.
Olei citronellæ, ...	ʒi.

† ℞ Liquoris carbonis detergentis (Wright & Co.),	ʒi.
Aquæ destillatæ, ...	℥vi. —*M.*

Sig., Warm the emulsion, and use with the syringe twice daily. Let the strength of the emulsion be gradually increased till the symptoms yield, or till it begins to irritate the meatus.

contracted, a tent of pressed sponge (or laminaria digitata) covered with charpie, and spread with the ointment, may be introduced.* Leeches have been resorted to for the removal of congestion, but they are rarely, if ever, required; purgatives, like leeches, produce a temporary alleviation of the complaint only, unless it depends upon digestive derangement; astringent injections, though useful, are inferior to solutions of nitrate of silver, potassa fusa, and the other remedies above referred to; and blisters are often employed, although I think very unnecessarily, to call forth a counter discharge, if the eczematous exudation is very profuse, and the occurrence of bad effects from its cessation is feared; indeed, the usual result of a blister in such cases is to produce an eczematous eruption at the part to which it is applied. In most cases a carefully regulated course of constitutional treatment must be combined with the local treatment.

The flexor surfaces of the joints (Eczema articulorum) are very favourite seats of eczema, being exactly the reverse of what is observed in psoriasis, in which the extensor surfaces, especially of the elbows and knees, are attacked by preference. In this situation, the natural furrows of the skin are specially apt to become the seat of fissures, and this, taken in connection with the loss of elasticity of the parts as a result of the eruption, often interferes with, and renders painful, the movement of the joints. The eruption is almost invariably symmetrical, and it is curious to observe, as has been pointed out by Hebra, that an affection of the fronts of the elbows generally coincides with an implication of the popliteal spaces, and disease of the front of the wrists with disease of the front of the ankles; but eczema of the inguinal regions does not, as one might suppose, usually coincide with eczema of the axillæ, but rather of the genital organs and neighbouring parts.

Eczema often attacks *the hands* (Eczema manuum) and *the feet* (Eczema pedum), and is often limited to one or other of these parts. Sometimes one hand or foot is attacked, oftener both; and sometimes both hands and feet are implicated together, though usually in an unequal degree, the other portions of the body being spared. The hands suffer alone much oftener than the feet, being exposed to the air and to the action of all kinds of local irritants. Hence cooks, bakers, warehousemen, grocers, bricklayers, smiths, &c., are very subject to the disease, their hands being exposed to great heat, to the prolonged action of water, or to the irritation of sugar, lime, or particles of heated iron.

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* *Handbook of Skin Diseases*, by Dr. Isidor Neumann. Translated from the second German edition by Lucius D. Bulkley, M.A., M.D. D. Appleton & Co., New York, 1872, p. 180.

Hebra has met with cases in which eczema of the hands occurred in women at each successive pregnancy, with such regularity, indeed, that they have been able to say that they were pregnant from this sign alone.

Owing to the number of the joints, and the constant movement of the parts, fissures form with exceeding frequency, especially on the hands. Indeed, it is on the palms of the hands that one sees the most typical cases of the fissured variety (Eczema rimosum).

The hands and feet are often affected in the form of small, scattered, circumscribed patches, which are frequently very obstinate, and the tips of the fingers, which are frequently involved, often present a dry, hard, and fissured appearance.

When the vesicular form attacks the soles or palms, but especially the former, the vesicles remain long intact, and the serum, unable to escape externally, burrows beneath the skin. Many vesicles thus run together, and bullæ, often of large size, are occasionally formed. The eruption may then be mistaken for *pemphigus;* but in the former we are guided by the history of the formation of the bullæ by the confluence of vesicles, by the small number of the bullæ (usually only one or two), by their occurring only where the cuticle is thick and resisting, and by the detection of vesicles around their edges, and of a fully developed eczematous eruption in the neighbourhood.

The disease is not unfrequently limited to the *palms of the hands* or *soles of the feet* (Eczema palmare et plantare), attacks of the former being, however, the more frequent of the two. When so limited, the eruption often partakes of the characters of eczema rimosum throughout. The parts are then dry and itchy, the skin thickened, often very much so, inelastic, and fissured, the fissures occupying the situations of the natural markings of the palm, and impeding greatly the opening and closing of the hand. In typical cases, the hand is maintained in a half-closed position, as in a case previously related. The eruption may implicate the whole palm, or only a portion of its centre, and the disease gradually shades off into the sound skin. It has no tendency to heal in the centre. It is a very generally received opinion that an eruption limited to the palms and soles is invariably syphilitic. This is not the case, however, although it may usually be affirmed that in this situation we have either to deal with syphilis, psoriasis, or eczema.

Syphilitic eruptions on the palms of the hands and soles of the feet may generally be distinguished with ease. I have already pointed out most of the symptoms which distinguish a syphilitic eruption from a non-syphilitic eczema (see p. 146); but, in addition, it may be remarked, that a syphilitic eruption on the palm usually commences as a small spot near its centre, which gradually extends circumferentially, and heals in the centre so as to form at last a circle of eruption, with an abrupt and often elevated edge, inclosing more or less healthy skin. The eruption, besides, has often a somewhat coppery tint, is not usually itchy, and is removable by mercury and iodine alone. It must be observed, further, that this is often the only sign of syphilis which the patient exhibits at the time he is under observation.

It is not easy always to distinguish *psoriasis* of the palms and soles from eczema. In the former there is neither exudation nor development of vesicles, though these may be wanting in eczema, too. Again, in psoriasis the eruption is generally more distinctly circumscribed, the edge of the eruption being abrupt though not elevated, and itching is not such a constant symptom. But the most important guide to the diagnosis of psoriasis in such cases is the discovery of patches of psoriasis upon the elbows or knees, or of a hereditary tendency to the disease, or of a history of recurring attacks in the spring. Sometimes, however, all these diagnostic points are absent, and a certain opinion is almost impossible.

We must beware of confounding eczema of the palms with that disease which specially attacks the hands, although it is not limited to these parts, and which has been so graphically described by Tilbury Fox under the name of *dysidrosis* (the cheiro-pompholyx of Hutchinson). This affection occurs specially in the subjects of nervous debility, and in persons who perspire freely, and is, in the early stage, unaccompanied by inflammation. Vesicles form, as the result of the distention of the ducts of the sudoriparous glands with sweat, and look like "small boiled sago grains" embedded in the skin. Their contents do not become turbid, but the vesicles often run together and may even form bullæ; they are accompanied by itching and burning heat, and in the later stages there may be much pain when they rupture, which they do tardily; they leave behind a "non-discharging, reddened, exposed derma," and there is no crusting, as is so often the case in eczema.*

To avoid falling into the error of mistaking eczema of the hands for *scabies*, the reader must bear in mind what has been already stated under the general diagnosis; but I may call to recollection several important data—namely, that in scabies the eruption, except at the very commencement, is never limited to the hands: that we should be able to detect the furrows at least of the itch-insect, if not the insect itself; and that we should inquire if there is any sign of the eruption being contagious—scabies being very contagious, while eczema is not.

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* *Skin Diseases: their Description, Pathology, Diagnosis, and Treatment,* by Tilbury Fox, M.D. Third Edition, p. 476. Henry Renshaw, London, 1873.

When the eruption occurs between the toes, it is often very troublesome, not only because these parts are in constant motion, but also because they are in contact, and rub against one another, and because the perspiration is confined, decomposes, and acts as an irritant. Itching is very troublesome, and pain often complained of, owing to the presence of fissures. The cuticle is thickened, white, like that of a washerwoman's hand after a day's washing, and separates in large flakes. The secretion is often abundant and offensive.

With regard to the special **treatment** of eczema of the hands and feet, very little remains to be said. In these cases a rapid and brilliant result sometimes follows the use of vulcanised india-rubber gloves and stockings. When bullæ form they should be left intact, unless the pain and tension are great, when the serum may be allowed to escape.

If the eruption attacks the fingers or toes, and is complicated with painful fissures, it is advisable to commence the treatment by bandaging each finger or toe individually with narrow strips of rag spread with one of the soothing ointments already mentioned, and kept in position by gloves or stockings. The dressings must be changed night and morning and the loose epidermis and *débris* removed with firm friction, so that the next application may come into direct contact with the morbid surface, and in order that subsequent itching may be avoided. Often this treatment results in a complete cure; but, if, after the fissures are healed, the eruption does not improve, some of the more stimulating applications already referred to may be tried, and I have occasionally found eczematous eruptions between the toes yield in a few days to lotions of carbolic acid, after other treatment had failed.

In these cases zinc-ichthyol gelatine (p. 172) may be used alone or combined with various drugs, or one of Unna's plasters, such as zinc, lead, or Peru plaster. These are specially applicable for acute cases, but, when chronic, more stimulating ones may be employed, emplastrum picis, for example. Whichever is used should be cut into narrow strips, and the parts firmly and smoothly bound with it. It may often be left on for a couple of days, and only changed when it gives signs of getting frayed or displaced or deteriorated; and if it is adhering firmly it may be sponged with water before it is removed.

Eczema limited to the palms of the hands is sometimes very troublesome. The remarks already made with regard to the treatment of obstinate circumscribed eruptions are specially applicable to it; but the local stimulants there recommended, and, indeed, all other kinds of external applications sometimes fail to yield more than temporary relief. When the parts are much indurated the best results may sometimes be obtained from the application of the emplastrum salicylici, which is used in the same way as the other plasters just mentioned. Mr. Malcolm Morris has recently advised in these cases the application of papaine, the partially purified extract obtained from the papaw tree, a remedy which was recommended at the International Congress in London, 1881, as a solvent of diphtheritic false membrane, and which is used in the West Indies to soften tough meat. He uses a solution * containing borax, with the view of checking fermentation and supplying the alkali required in order to obtain the full action of the drug. The parts are painted twice daily with this solution, and washed once daily with soap and water. The application only produces slight pricking and tingling sensations. It may happen in this, as in the other varieties of eczema of the hands, that there is some local source of irritation (as, for example, the pressure of the handle of the spade upon the palm), which is keeping up the disease, and which must be sought for and removed. As regards internal treatment, I am inclined to think that a course of tar or carbolic acid is as likely as one of arsenic to prove useful in such cases, although none of them can be confidently relied upon.

In *eczema of the legs* (Eczema crurale) we must bear in mind the predisposing causes—the interruption to the circulation, caused by the use of tight garters; the distance of the parts from the heart; their usually dependent position, and the frequent occurrence of varicose veins, particularly in persons advanced in years. We must also recollect that the eruption is a frequent accompaniment of that thickening of the tissues, with swelling of the leg, which goes by the name of elephantiasis Arabum, and which is favoured by the causes just mentioned.

All these circumstances, by retarding the current of the circulation, and keeping up congestion, lead to an increased deposit of pigment in the mucous layer of the epidermis, in consequence of which the eruption is apt to assume a coppery tint, and to be mistaken for a syphilitic affection. They also account for the fact that eczema is very apt to assume its most aggravated forms on the leg, and that ulcers, often of great size, so frequently complicate the affection. The development of eczematous eruptions on the leg is, however, often secondary to the formation of ulcers, being due to the use of fomentations, poultices, and irritating applications, with the view of curing the latter. The ulcers may exhibit any form, from the inflamed to the indolent, and

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* ℞ Papainæ, ...	gr. xij.
Sodæ biboratis, ...	gr. v.
Aquæ destillatæ, ...	ʒij. —*Solve.*

must be treated according to their appearance upon general principles. (See section on ulcers.) An eczematous, and ulcerated condition of the legs, is not nearly so apt to occur in those who are walking as in those whose occupations necessitate their standing all day. "It is well known," says Bulkley,* "that the veins have valves directed towards the heart, which are especially large in the vessels of the lower extremities. These are of more service than simply to prevent the blood from returning when it has welled up from the capillaries. They are active elements of the circulation; they are, indeed, the valves belonging to a second, heart-like power which assists in propelling the blood—namely, the voluntary muscles of the limbs. Each time that the muscle contracts, as in walking, the blood is forced from it and from the flaccid veins which it surrounds, and, as it cannot be crowded backwards because of the valves in the veins, the current is forced onward towards the heart. Now, when there is not the alternate contraction and relaxation of the muscles from constant use, but simply a constant strain, as in standing, the circulation loses just this impulse, and the veins, unable to stand the constant pressure unaided, become dilated, the valves are stretched open and cease to act, and all the consequences of the impeded circulation result." The lower part of the leg on its inner side is a favourite seat for eczema complicating varix, which is thus accounted for by Hilton—"The superficial and deep veins of the leg freely communicate with each other in the neighbourhood of the ankle-joint. The first two inches above that point is the spot where the greatest stress is laid upon these superficial veins. Below that point they freely communicate, and if the blood cannot return by the superficial veins, it can do so by the deep ones, and *vice versâ*. But when you reach the point where that brown patch of skin so often occurs in old persons, above the inner malleolus, the anastomoses are less free, and this appears to me to be the reason why ulcers (and eczema) from varicose veins occur so frequently about that neighbourhood."

In the **treatment** of eczema of the legs, it may occasionally be necessary to confine the patient to bed, or to keep him on the sofa, if it can be managed; otherwise cases will be encountered, which resist all the recognised means of cure. A case of this kind occurred to me, in which everything failed till I prevailed upon the patient to remain in bed for a week, in addition to the treatment previously followed out, at the end of which time the disease, which had resisted treatment for many weeks, had completely disappeared. But, as a rule, this should not be insisted on, nor, indeed, is it advisable; for it is as true of eczema, as of ulcers of the leg, that cures thus effected are very apt to lose in permanency what they gain in rapidity.

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* *Eczema and Its Management*, by L. Duncan Bulkley, A.M., M.D., p. 235. Churchill, London, 1881.

The support of a bandage of some sort is indispensable, especially if the eruption occurs as a complication of varicose veins, or if the patient is much upon his feet. It may be worn by night as well as by day, if it is not uncomfortable, as, by giving continued support to the parts, it hastens the cure. And it is well-spent time to give the patient careful directions as to its use, and to teach him how to put it on. It should be firmly and equably applied, and taken off and readjusted at least night and morning, or oftener if it becomes loose and consequently ineffective. It may be of linen or flannel, and applied dry, or soaked in one of the lotions previously alluded to, and it must be washed, ironed, and carefully rolled up before it is again used.

It is sometimes advisable to dip it in a solution of dextrin in boiling water before use, as Devergie recommended, or in a mixture of equal parts of melted stearine and rock paraffine, according to Startin's method,* so that, when it dries, it forms a hard case for the leg.

If the eruption is not irritable, and if it is complicated with indolent ulcers, as so often happens, the firm application of straps of adhesive plaster about an inch wide and long enough to go once and a half round the limb in the form of a scultetus is often useful. It may be necessary, however, before applying the plaster, to cover the eruption with thin rags smeared with cold cream, fresh butter, or the like, as it is apt to irritate. If the parts are irritable, straps of linen, spread with one of the soothing ointments already mentioned (p. 169) may be applied: these not only give support, but likewise tend to heal up the eruption. In this class of cases the best results are often obtained from the application of bandages made of pure vulcanised india-rubber, as recommended by Dr. Martin, and therefore called Martin's bandages; or, if expense is no object, from the use of one of the plasters mentioned in connection with the treatment of the hands and feet. Finally, the application of zinc-ichthyol gelatine (see p. 172), with a carefully adjusted bandage over it, is often very effectual.

With the exceptions mentioned, the treatment applicable to eczema of the legs does not differ from that of other parts.

The *nails* are often implicated in the subjects of the eczematous taint (Eczema unguium), especially if the fingers are the seat of the disease. If those portions of the skin immediately behind the roots of the nails are affected, the corresponding nails are pretty sure to be involved. It is rare for all of them to be attacked, but frequently several are diseased, although in an unequal degree.

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* "On Paraffo-Stearine, a substitute for Starch, Plaster of Paris, and such like Substances, in Bandages and Splints." By James Startin, F.R.C.S. *Brit. Med. Journ.*, Mar. 23, 1867.

They first lose their smoothness and shining aspect, and become opaque, rough, and uneven on the surface, especially near their roots. If the disease advances, they become thick and brittle, and on this account do not grow to their normal length. In aggravated cases the nails exfoliate; but new and healthy ones generally grow in their place, if the morbid process is arrested by appropriate treatment.

The treatment does not differ from that of eczema of other parts, but local treatment must be directed principally to the skin surrounding the nails, and especially at their roots.

Eczema of the genital organs (Eczema genitalium) occurs both in females and males. *In the female* the eruption may be limited to the labia, or extend upwards to the mons veneris, downwards and backwards to the perinæum and anus, and laterally to the angles formed by the junction of the labia with the thighs. The vagina may likewise be implicated, in which case its walls are infiltrated, reddened, and exuding; but it is not the seat of any itching, except at the orifice. The labia and clitoris are sometimes enormously swollen in consequence of copious serous infiltration, and the itching may be so harassing as sometimes to induce irritability of the bladder, and to lead to improper habits. At times the exudation from the eruption is great, at others the parts are dry and scaly. The local causes specially operating in the production of this variety of eczema are irritating discharges from the genital organs, the habitual warmth and moisture of the parts, and the friction of opposed surfaces. Pregnancy also and tumours of the uterus and neighbouring viscera act as predisposing causes, by pressing upon the large vessels and causing passive congestion and a varicose condition of the veins of the genital organs. It must be borne in mind, too, that this form of eczema in particular (or, in some cases, pruritus only) often occurs as a *complication of diabetes mellitus,* and results apparently from the lowered tone of the system, and from the tendency in such persons to low forms of inflammation, and sometimes partly from the irritation of the saccharine urine.

The following cases, and I could give many such, may serve to impress upon the reader the frequency and importance of this complication:—

Mrs. C., aged 56, was admitted into the Western Infirmary, Glasgow, on October 21, 1879, complaining of a scalding sensation about the labia and anus of about two years' duration. For twelve years previously—since the cessation of menstruation—she had been troubled with leucorrhœa, and for ten years had suffered from bronchitis, especially during the winter months. Two years before admission she began to remark that she had to make urine more frequently than formerly, and that it was excessive in quantity; this was soon followed by an irritable condition of the orifice of the vagina, and in a short time the itching became exceedingly distressing. As the result probably of scratching, the parts became very painful and the seat of an eruption, which extended from the vulva as far as the anus, these parts, as well as the skin at the flexures of the thighs, being red and excoriated.

From the commencement of her illness she had experienced great thirst, her appetite became ravenous, and she had a great desire for animal food.

For about nine months before admission she had some dropsy, especially of the lower extremities. She was a very rheumatic subject, and the dropsical and pulmonary symptoms were the result of mitral regurgitation induced, doubtless, by the rheumatism. On examining her urine it was found to be loaded with sugar. She derived great benefit from being put upon a diabetic diet, the parts being dressed with pieces of linen spread with oleate of lead ointment, and morphia suppositories being used from time to time.

On December 21, 1876, I was requested by my friend, Dr. Samuel Sloan, of Glasgow, to visit with him a lady about fifty years of age, on account of intolerable itching between the labia, accompanied by stinging and darting pains which prevented sleep and made her life miserable:—it was of long standing. On examining the parts, nothing was to be seen except that the skin was somewhat thickened and white as the result of the use of a lead lotion. She was a healthy-looking woman and well nourished; the skin was soft, and not drier than natural; her tongue was clean, her appetite moderate, and her bowels regular, but she had slight thirst—a circumstance, however, which was only mentioned when particularly inquired for. On testing the urine, it was found to have a specific gravity of 1025, and to contain an abundance of sugar.

In the male, eczema attacks the scrotum or penis alone, or involves also the neighbouring parts, as in the female, or it may invade other and distant portions of the skin. The scrotum is often enormously distended, so as nearly to conceal the penis, producing a sort of elephantiasis of the parts, which is apt to mislead one as to the nature of the case. The skin is often very tense, red, perfectly smooth and shining, and the exudation profuse, dropping continually from the most dependent part of the scrotum, or soaking the dressings. In the early stage, burning heat is complained of, afterwards itching, which is usually excessive, and may lead to masturbation and irritable bladder.

In the more chronic variety, as pointed out by Hebra, the scrotum being thrown into folds, the eruption is often limited to the prominences of the folds, the intervals between each fold being free from disease, as may be seen by putting the skin upon the stretch. It sometimes happens that eczema of the genital organs is produced, or kept up, by stricture of the urethra, the cure of the eruption coinciding with the removal of the stricture.

Eczema is often limited to the anus (Eczema ani), although it frequently extends to the neighbouring parts, and, as before mentioned, it sometimes coincides with eczema of the lips (see Eczema labiorum). The occurrence of the eruption at this part, as well as at the genital organs, is favoured by constipation of the bowels, or gastro-intestinal derangement, by hepatic disturbance, tumours in the abdomen, or anything which prevents the free return of blood from the rectum. It frequently also coincides with a varicose condition of the veins of the rectum, and with hæmorrhoidal tumours; hence the name eczema hæmorrhoidale.

Sometimes the morbid condition of the anus is arrested in the first stage, and does not amount to an eczema, itching being almost the only symptom (pruritus ani), which is often very distressing. But, in persons predisposed to eczema, the scratching calls forth an eczematous eruption, which is too frequently complicated by the formation of fissures, and these are exceedingly painful, especially at stool. Hence, on defecation, the patient is apt to strain very much, just as in cases of dysentery, and prolapse of the rectum may result.

If care is not taken, this affection may be mistaken for phtheiriasis pubis (the disease due to crab lice); for the latter do not limit their attack to the hair of the pubes, but often implicate all the neighbouring hairy parts, including the anus. But a careful inspection will lead to the discovery of the nits of the parasite, or of the pediculus itself clinging to the hair on the level of the skin (see section on phtheiriasis).

The **treatment** of eczema of the genital organs and anus does not differ from that of eczema in general, except in so far as we must bear in mind the predisposing causes, and endeavour to remove them, if possible. But it may be mentioned, that for eczema scroti Unna recommends zinc-ichthyol, or zinc-sulphur salve muslin, or pasta zinci sulphurata (p. 181), or the following:—

℞ Resorcini,
Glycerini, āā, . . . pts. 5.
Sp. rectificati, . . . „ 100.

Dilute with 3 parts of warm water, and apply cotton wool dipped in this, and then oilskin. And, for eczema of the anus, he gets good results from a mixture of sapo unguinosus (kali-seifen salbe) with 10 to 15 per cent. oil of cade. This is first applied, and then rubbed in along with a little hot water, after which the part is covered with zinc-ichthyol salve muslin.

Eczema not uncommonly attacks *the nipples* and neighbouring portions of the breasts (eczema mammæ), the nipples being commonly situated in the centres of the patches. The eruption occurs oftenest in the female, in connection with lactation, and chapped nipples constitute, in reality, the commencement of the fissured variety of eczema (eczema rimosum). In males, or in females who are not nursing, the detection of an eczematous eruption upon the nipples should lead us to suspect that it is brought out by the scratching induced by an attack of scabies, and the acarus and its accompanying symptoms should be sought for. Eczema of the mamma is apt, by extension of the inflammation to the deeper-seated parts, or by the sympathetic irritation which it sets up, to give rise to abscess of the breast.

In 1874, Sir James Paget * described a disease of the skin of the breast which he suspected to be of the nature of eczema, but which always, in his experience, ended in cancer of the mammary gland—a malady now pretty generally known under the name of "Paget's Disease of the Nipple." "I believe," he writes, "it has not yet been published that certain chronic affections of the skin of the nipple and areola are very often succeeded by the formation of scirrhous cancer in the mammary gland. I have seen about fifteen cases in which this has happened, and the events were in all of them so similar that one description may suffice."

"The patients were all women, varying in age from 40 to 60 or more years, having in common nothing remarkable but their disease. In all of them the disease began as an eruption on the nipple and areola. In the majority it had the appearance of a florid, intensely red, raw surface, very finely granular, as if nearly the whole thickness of the epidermis were removed; like the surface of very acute diffuse eczema, or like that of an acute balanitis. From such a surface, on the whole or greater part of the nipple and areola, there was always copious, clear, yellowish, viscid exudation. The sensations were commonly tingling, itching, and burning, but the malady was never attended by disturbance of the general health. I have not seen this form of eruption extend beyond the areola, and only once have seen it pass into a deeper ulceration of the skin after the manner of a rodent ulcer." . . .

"I am not aware that in any of the cases which I have seen the eruption was different from what may be described as long-persistent eczema, or psoriasis, or by some other name, in treatises on diseases of the skin; and I believe that such cases sometimes occur on the breast, and after many months' duration are cured, or pass by, and are not followed by any other disease. But it has happened that in every case which I have been able to watch, cancer of the mammary gland has followed within at the most two years, and usually within one year. The eruption has resisted all the treatment, both local and general, that has been used, and has continued even after the affected part of the skin has been involved in the cancerous disease." . . .

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* *St. Bartholomew's Hospital Reports for* 1874, p. 87.

"In practice, the question must be sometimes raised whether a part through whose disease or degeneracy cancer is very likely to be induced, should not be removed. In the member of a family in which cancer has frequently occurred, and who is at or beyond middle age, the risk is certainly very great that such an eruption on the areola, as I have described, will be followed within a year or two by cancer of the breast. Should not, then, the whole diseased portion of the skin be destroyed or removed as soon as it appears incurable by milder means?"

It is of the utmost importance to come to a conclusion as to whether the disease in question is an eczema at first and is followed by cancer, or whether the former is in reality of a cancerous nature from the outset, although it bears some resemblance to eczema—whether regard be had to prognosis or treatment.

The following is my view of the matter:—In persons predisposed to cancer, any local irritation may determine an outbreak of the disease at the part irritated: thus I have frequently seen an undoubted syphilitic disease of the tongue followed by cancer of that part, as the result of the long continued irritation, and just in the same way it is possible for a simple eczema of the breast to prove the exciting cause of, and to be followed by cancer of the mammary gland. But, if we exclude these exceptional cases, I can come to no other conclusion than that "Paget's Disease of the Nipple" is from the first of a malignant nature, and bears a somewhat similar relation to cancer of the breast that the so-called tylosis (or psoriasis) linguæ does to epithelioma of the tongue. This opinion is supported by the microscopic examination of the diseased structures made by Dr. Thin and others. That gentleman "believes that the evidence points to a slowly advancing cancerous change near the mouths of the lactiferous ducts, which at a very early stage leads to irritative effects in the superficial tissues of the nipple and surrounding skin, and eventually penetrates into the substance of the mammary gland." * Such being the case, it is of the utmost importance to distinguish true eczema of the breast from "Paget's

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* Quoted by Robert W. Forrest, M.D., in a communication to the Pathological and Clinical Society of Glasgow, May, 1880.

Disease of the Nipple," towards which the following table may be of assistance :—

Paget's Disease of the Nipple.	Eczema of the Nipple and Areola.
1. Occurs especially in women who have passed the grand climacteric.	1. Occurs especially in women earlier in life, and particularly during lactation, or in persons labouring under scabies.
2. Affected surface, in typical cases, of brilliant red colour, raw and granular looking after the removal of crusts.	2. Surface not so red and raw-looking, and not granular, but often punctated.
3. When grasped between the thumb and fore-finger, superficial induration often felt, as if a penny were laid on a soft, elastic surface, and grasped through a piece of cloth. (Thin.)	3. Soft, and no induration.
4. Edge of eruption abrupt and sharply-cut, and often elevated.	4. Edge not so abrupt, and certainly never elevated.
5. Very obstinate, and only yields to extirpation or other treatment applicable to epithelioma generally.	5. Although sometimes obstinate, yields to treatment applicable to eczema.

M. Darier has recently called attention to the presence of certain bodies in the epidermis which he believes to be sporozoa, and which he holds to be the essential cause of Paget's disease. Similar bodies have been found by Hutchinson, Jr.,* by Dr. Louis Wickham, and other observers. But M. Darier has described similar sporozoa as the essential cause of the disease described by Dr. White, of Boston, as keratosis follicularis (psorospermosis folliculaire végétante of the French), while Neisser, of Breslau, found them in cases of molluscum contagiosum. And, on the other hand, many observers are inclined to believe that these bodies are not sporozoa at all, but simply the products of cell degeneration. So that we must not accept, as proved, the conclusions to which these gentlemen have come.

It is not necessary to give any special details with reference to the treatment of eczema of the breasts, further than to state that, if the patient is nursing, a breast-glass with an india-rubber teat may be used; and to call attention to Hebra's statement that, "when the disease is situated in the nipples, it is usually very obstinate, so as to resist the action of oleaginous and alkaline and tarry applications, and, sooner or later, to render necessary the use of more caustic remedies, such as solutions of corrosive sublimate (gr. v ad ℥i), or of potash (ʒss ad ʒi). These may be used without fear of subsequent mischief; the excretory ducts remain patent, and the mamilla is as fit for its function as before."* M. Darier, on the parasitic theory of Paget's disease, recommends the application, every eighth day, of chloride of zinc (℈i to ʒi) with, in the intervals, the use of emplastrum de Vigo, alternated with a pomade of iodoform 1 in 10. Dr. Geo. T. Elliot, of New York, is in favour of the application of pure fuchsin gr. ii to gr. v in a base composed of lanolin ℥i, beaten up with ʒvii of rose water, and spread upon stout linen; while the writer has found great benefit from the application of aristol in powder, or in ointment. Should medicinal treatment fail, there is nothing for it but extirpation of the breast.

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* *Brit. Med. Journ.*, Mar., 22, 1890, p. 664.

Sometimes an eczema is developed around the *umbilicus* (Eczema umbilici), especially in the case of those who are affected with scabies. In typical cases, the navel is much swelled and projects in the form of a small tumour, which is usually situated in the centre of the eczematous patch; otherwise, the disease here exhibits no peculiarities.

The eruption is exceedingly prone to invade those portions of the skin *which are in contact with one another* (Eczema intertrigo), owing to their moisture and the friction to which they are exposed. We, accordingly, find it very frequently in the axillæ, between a pendulous mamma and the chest, between the hips, at the angle where the thigh meets the perineum, behind the ears, and between the folds of skin observed on the abdomen and other parts of corpulent persons. For similar reasons, we find it often on the flexor surfaces of the joints, these parts being in contact with one another in certain positions of the limbs.

In such cases, we may wash the parts frequently with a lotion of permanganate of potash (℈i to the ℥i), but we must dry them thoroughly after each ablution. The opposed surfaces of skin must be kept separate also, so as to prevent friction and the accumulation of the exudation, for which purpose a piece of dry lint may be inserted between them, care being taken that it separates the parts completely, and that it is smoothly applied and frequently changed; else it becomes soaked with the discharge, acts as an irritant, and does harm instead of good. It is very useful also before applying the lint, to dust the parts with one of the absorbent powders previously referred to (p. 168), or with a mixture of equal parts of powdered aristol and lycopodium. The powder absorbs the excessive moisture which, along with the friction of the opposed surfaces, is the exciting cause of the disease. One of the best methods of using the absorbent powder is that of Unna. A narrow, thin, cambric bag, partially filled with it, is stitched across so as to prevent the powder from gravitating to one end. This is placed between the opposed surfaces, and not only separates them, but keeps the parts in a constant atmosphere of the powder. The drying up of the moisture and the prevention of friction are often, of themselves, sufficient to effect a cure, especially if the attack is not a severe one; but, if these means fail, the treatment recommended for eczema generally must be superadded. I have only further to remark that, in this form of eczema, the use of the emplastrum zinci is of especial value, and often acts like a charm.

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* "On Diseases of the Skin, including the Exanthemata," by Ferdinand Hebra, M.D. Vol. ii., p. 172. *New Sydenham Society's translation*, London, 1868.

STRUMOUS ECZEMA.

I am not one of those who believe in the existence of a great variety of mongrel diseases of the skin, but I am heartily in accord with those who admit the not uncommon occurrence of a strumous eczema—that is, of an eczema which presents certain features characteristic of the strumous diathesis, and which demands some modification of the usual treatment; and, in the main, I agree with the following remarks of Unna:—"Tubercular eczema we find almost entirely in the case of children, seldom in young people, never in the aged. It always begins near the mucous orifices—viz., of the eyes, nose, mouth, and ears, and in connection with conjunctivitis and keratitis phlyctenulosa, which are likewise suspected to be tubercular, and with photophobia, rhinitis, or otitis media. It is always characterised by the œdematous and cushion-like, at first soft and afterwards firm, swelling of the affected parts of the skin, especially of the lower eyelids, of the upper lip, and of the sides of the neck below the ears, then by a constant and severe swelling of the neighbouring lymphatic glands. The latter are softer, pulpy to the touch, and are much more voluminous than the hard, small gland-tumours of the neck, occurring in connection with some seborrhœic eczemas of the scalp. The skin affection itself shows neither typical small eczema vesicles, nor dry papules as primary efflorescences, but very superficial large vesicles which quickly dry up into scabs, after the falling off of which a profuse weeping with a quick reappearance of thick yellow and brown scabs takes place. The subjective symptoms are very slight, the tubercular eczema being accompanied by very little itching as compared with the seborrhœic. By the localisation, the concomitant tubercular phenomena, the swelling of the lymph glands, the œdema, the erythematous, profusely-oozing vesicle and scab-forming character, and by the absence of itching, this eczema is so well and so simply characterised as hardly any other type of eczema is."* I am clearly of opinion, however, that this variety of eczema is not so exclusively met with in children as Unna asserts, and there are two characters of strumous eczema to which he does not refer—namely, the frequent violet or vinous tint of the eruption, and the constancy with which a great deal of permanent alopecia results when the affection is on the beard, as in strumous eczema of the hairy portions of the face.

Treatment.—With regard to treatment, as might be anticipated, anti-strumous remedies are specially indicated, while injections of tuberculin are often of the greatest value, in addition to local applications already sufficiently indicated under the head of eczema. (For particulars of the treatment by means of tuberculin see Treatment of lupus.)

ECZEMA SEBORRHOICUM.†

By Dr. P. G. Unna.

Historical.—The study of seborrhœa, until a short time ago, rested upon the assertion of the elder Hebra that pityriasis capitis, seborrhœa sicca and seborrhœa oleosa were interdependent processes exhibiting the same histological element—namely, epidermal cells impregnated with fat globules ‡ ("mit Felttröpschendurchtränkte epidermizellen"). The older English dermatologists, however, held another opinion. Erasmus Wilson § differentiated between seborrhœa with oily and seborrhœa with sebaceous or tallowy secretion, and considered both as qualitatively different forms of secretion. He thus inaugurated an important advance over his predecessors Rayer, Biett, Fuchs, who believed that an *oily* secretion, increased quantitatively but otherwise normal, could become "set" by drying upon the skin, which is a self-evident impossibility.

This progress was ended with Hebra, senior, and we are to-day not much further advanced in our knowledge of seborrhœa oleosa than was Erasmus Wilson.

The product of dry seborrhœa Wilson mistook for pure sebum, and it was an advance that Hebra, agreeing with Baerensprung, || declared it to be a mixture of horny cells and sebum. Hebra went further and

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* *The British Journal of Dermatology*, vol. iii., No. 6, p. 178.

† Translated by C. Bernard Wolff, M.D.

‡ Unna, Was wissen wir von der Seborrhœa. *Monatshefte für praktische Derm.*, 1887, p. 698.

§ Erasmus Wilson, *Die Krankheiten der Haut.*, 1850, Deutsch v. Schroeder, p. 472.

|| Baerensprung, *Die Hautkrankheiten*, 1859, p. 43.

applied this view on clinical grounds to seborrhœa oleosa on the one hand and pityriasic forms on the other. He leant upon the assertion of the anatomist, Kölliker (*Microscopic Anatomy*, vol. ii., p. 188) "dass die Talgzellen mit den Hornzellen der Epidermis zu vergleichen und die Bildung des Hauttalges derjenigen der Epidermis an die Seite zu stellen ist." Thus the different looking products of this affection appeared to be derivable from a common source, and their differences to consist simply in the different quantitative proportion of sebaceous cells to horny cells. Thus, this advance had, in the sequel, another reverse, which showed itself in the fact that, upon the authority of Hebra, almost all dermatologists considered pityriasis capitis and seborrhœa capitis as identical. In England, however, a few authors —*e.g.*, Tilbury Fox—held them to be distinct.

To-day every one knows that the foregoing observation of Kölliker is not of great importance; he knows also that the transformations of a prickle cell to a horny cell on the one hand, and a sebaceous cell on the other, are fundamentally different processes. And yet our theory of seborrhœa was grounded, until a short time ago, upon the erroneous application of an opportune, but inaccurate, observation made thirty years ago by an otherwise careful and reliable anatomist.

This misused amplification of the idea of sebum production has wrought injury, because thereby a large and important chapter of inflammation of the skin, which includes the extremely frequent catarrh of the skin, was placed among the hypersecretions. Alas for the skin disease reckoned among the anomalies of secretion! It is as good as stricken from the list of diseases having an orderly observation and attention.

Whether it was from Cazenave's suggestion of the inflammatory nature of seborrhœa or not, since Hebra's text-book was generally relied upon, the paradox arose that all seborrhœas, even if they develop crusts and scales, are only hypersecretions of different kinds and have nothing to do with inflammatory diseases of the skin.

Piffard,* from the observations of Melassez † and his own, ventured to make the observations for pityriasis capitis alone that the scales do not come from the sebaceous glands, and that, on the contrary, there is a deficiency in secretion of the sebaceous glands and a closure of the mouths of the follicles with cornified plugs charged with fungi.

After Van Harlingen ‡ also, from an anatomical, though insufficient, examination of the fatty products, had pronounced himself for a separation of pityriasis from seborrhœa, Duhring* introduced the view into his text-book, and restored the old idea of a condition of superficial irritation, or a slight inflammation of the epidermis in pityriasis capitis.

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* Piffard, *An Elementary Treatise upon Diseases of the Skin*, 1876, p. 194.

† Melassez, Note sur l'anatomie pathologique de l'alopécie pityriasique, *Arch. de Physiologie*, 1874, p. 464.

‡ Van Harlingen, The Pathology of Seborrhœa, *Arch. of Derm.*, vol. iv., 1878, p. 97.

What these writers found out for pityriasis capitis was later ascertained by Schuchardt† in an entirely analogous manner for the seborrhoic spots of old people, which mark the starting point of seborrhagic carcinomata. Here the sebaceous (tallow) glands were also normal, and their mouths plugged so that a retention of secretion, the very opposite of an overflowing hypersecretion, occurred. There was, furthermore, a parakeratosis of the surface epithelium and a cellular infiltration of the cutis, consequently an inflammatory catarrh which, in itself alone, is sufficient to explain the whole phenomenon.

If Schuchardt did not point out this conclusion clearly, it was because he was still under the classical impression of seborrhœa as a functional injury to sebaceous glands.

So it came to be my privilege to repair in general the thirty years loss to seborrhœa, and to clear up Hebra's representation based upon an anatomical misunderstanding.

The seborrhœas are all, with the exception of so-called oily seborrhœa which does not belong to them (better hyperidrosis oleosa) and vernix caseosa, inflammatory catarrhs, inflammatory parakeratoses, of the skin. The proofs of this are first clinical, second histological, and third and finally etiological.

The clinical proof comes of itself from the clinical representation to which this section is devoted; from the description of how the seborrhoic catarrh begins; how it distinguishes itself from simple fatty hypersecretion; what forms it assumes in different regions of the body, and how it is cured. Of the histological and etiological proofs, the more elaborate discussion of which will be found in another work, I can give in this connection only short sketches. Yet I shall not present them as an appendix, but shall place before them the clinical description, as it might be of use at this juncture to hold in mind the anatomical and etiological conditions in the different forms.

Histological.—*Seborrhoic eczema* or *seborrhoic catarrh* of *the skin* is histologically characterised in the same way as all other eczemas—viz., (1) a parakeratosis of the epidermis, (2) an epithelial proliferation (akantosis), and (3) a more or less profound inflammation of the cutis, to which, as a fourth and peculiar condition, is added, (4) an increase in cutaneous fat and an indication of increased activity of the coil glands.

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* Duhring, *Traité prat. des mal. de la peau.*, *Traduit et annoté par Barthélémy et Colson*, 1883, p. 103.

† Schuchardt, *Beiträge zur Entstehung der Carcinome*, 1785, p. 37.

Parakeratosis is, in every eczema, the most important symptom histologically, the *conditio sine qua non* of the diagnosis of eczema.

It is that anatomical change which has desquamation as a result, and after desquamation the appearance of a soft transitional layer and a swollen basal horny layer. The granular layer is lost in part or altogether; the basal horny cells retain their transformed rod-shaped nuclei, and the adipose matter of the horny layer begins at a higher level than usual.

With more pronounced exudation appears an intercellular œdema, which is dammed up principally under the altered horny layer, and produces a spongy condition of the prickle layer. It first appears in the smallest intercellular spaces, then under compression in the larger spaces and the adjacent prickle cells. The œdema is directly under the horny layer, and extends downward against the papillary layer, but without ever breaking through it.

Thus typical vesicles are formd by usurpation (Verdrängungsbläschen) without any trace of chance intercellular colliquation or other degeneration of the epithelium.

Cornification proceeding, these vesicles, transformed into crusts, become encapsulated by the young horny layer, and are in this way eliminated. The contents of the vesicles, like that of the juice clefts of the epithelium, consist of serum, a moderate number of leucocytes and fibrinogen substance which, both in and under the crusts, fills the spaces with large homogeneous clots of fibrin.

The vesicle forms the acme of exudation; but its absence never excludes the diagnosis of eczema, if parakeratosis be present. Because, for the formation of vesicles, particularly favourable conditions and an abundant exudate are required, while a small amount of eczematous exudate always produces an alteration at the periphery of cornification. All dry catarrhs, indeed, even certain forms of eczema rubrum, exhibit no vesicles.

The second most important symptom in seborrhoic, as well as in all other eczemas, is the tendency to mitotic proliferation of epithelium, which is the more prominent the more chronic the eczema. It is principally this condition that makes easy the separation of other skin affections accompanied by vesicles from eczema.

The more akantosis (proliferation of prickle cells) is pronounced, the more will the lesions assume the nummular, cushion-like form, and define themselves more sharply from their healthy surroundings.

The third cardinal group of symptoms consists in a very slight inflammation of the skin, a dilatation of the vessels, interstitial œdema, swelling and mitotic proliferation of connective-tissue cells, and a very moderate number of leucocytes.

These changes occur in most cases in the immediate neighbourhood of the epidermis, and, after long duration, extend downward over the whole cutis to the hypoderm. For, ordinarily, only the horizontal plate of the papillary body is markedly infiltrated with cells, which take the form of ordinary spindle cells. Plasma cells, as in granulomata of the skin, are only exceptionally found.

The degree of infiltration is not so clearly manifested clinically as is moisture and thickening of the epidermis. One recognises the infiltration by rolling a fold of skin between the fingers, but this procedure is often highly misleading if there be thickening of the epidermis. It is much less important than parakeratosis, for the tendency of chronic eczema to recurrence depends, not upon the remains of infiltration of the cutis, but upon parakeratosis and consequent spongy transformation of epithelium.

The fourth symptom which constitutes the peculiarity of this eczema is the increase of fat. Up to the present, this is more easy of demonstration clinically than histologically owing to the difficulty in demonstrating all kinds of cutaneous fat in sections. Especially is the peculiar yellow colour of most forms of seborrhoic eczema not yet sufficiently explained.

Anatomical investigation shows that the fat in the crusts penetrates only through the uppermost layers, while the under layers are more than usually deficient in fat and are moist.

Here the catarrh is of an entirely dry character, and the fat, which is carried to the horny layer from the glands, does not penetrate into the under layers of the crust. This fat is diffusely taken up by the crusts and scales, as in the thick horny layer of the palm of the hand, and comes, like that, from the coil glands.

By careful osmic acid staining[*] one can invariably demonstrate in the coil glands molecules of fat within the secreting epithelium. It appears at first glance remarkable that no fat is encountered in the ducts of the coil glands, but this absence is also noticed in sections from the normal *palma manus* where a fluid fat is constantly observed, coming out from the sweat pores. This is explained by the fact that the secretion of the coils is fat, given off readily to the surrounding horny substances, first to the cuticula of the ducts and from the sweat pores to the horny layer. The extent of this impregnation of fat in the surrounding parts (cuticula of the ducts and the horny layer) will be indicated by the extent of the black osmic stain.

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[*] Unna, Die Färbung der microorganism im Horngewebe, *Monat. für prakt. Derm.*, 1891, Bd. 13, pp. 225, 286, 400.

But we cannot make an absolute quantitative determination of cutaneous fat, and we must content ourselves, in dealing with seborrhoic eczema, with certain secondary signs and consequences of secretion, and all these indicate an *increase of fat secretion.* By an intense black staining we can sometimes find in seborrhoic crusts the impress of the sweat pores, the pores themselves dilated, often even funnel-shaped. We find further the number of drops stained in the coils increased from the normal, the neighbourhood of the coils beset with many free drops of fat, the volume of the coils augmented for the most part, the epithelium thick, the lumen of the glands dilated, and, finally, many mitoses in the gland cells. In other eczemas this latter appearance is rarely seen in the coil glands, the cells of which do not perish by the occurrence of secretion — which indicates an activity of the coil epithelium in this variety. Finally, in opposition to the non-seborrhoic varieties, this form is accompanied by an increase of fat in the hypoderm. The loss of hair from seborrhoic eczema is associated with a marked thickening of the skin of the scalp, and these phenomena lead to a greater fat secretion in the coil glands through the connecting link of a lymph very rich in fat.

The sebaceous glands take part in the production of fat in the crusts only when there is a loss of hair, as a result of the seborrhoic process, and a consequent hypertrophy of these glands, to fill up the space thus obtained.

In this condition there will be more sebum furnished, and, what is more important, the ordinary place of destination of the sebum—the hairs—is removed.

Now for the first time appears the condition which the elder Hebra supposed was present in all seborrhœas—an over-abundant deposit of sebaceous gland secretion upon the surface of the skin.

This is, however, the exception, not the rule. It occurs only in the thick seborrhoic crusts upon the head and nose of old people, after the affection has lasted a long time.

At this stage, the follicular mouths are no longer blocked by swollen horny layers, as in the usual forms of seborrhoic catarrh, but are gaping widely and discharging a stream of well preserved sebaceous gland cells upon the surface, which, by slow diffusion, give their fat to the subjacent crusts and scales.

Thus, hypersecretion of sebum is connected with certain late forms and sequels of seborrhoic catarrh, and has, for the most part, a course of no significance.

Etiological.—The living parasites of the skin are alone concerned in the etiology of seborrhoic catarrh. This is shown by its mode of serpiginous extension upon the skin, by its sharp differentiation from chemically or physically caused traumatic dermatoses, and its curability by antiparasitic remedies. Before we were in a position to demonstrate systematically the parasites of the surface of the skin in secondary production and in sections, we were reduced to the cultivation of epidermal fungi. In these cultures there appeared upon artificial soil a great many saprophytes, which were only occasionally seen in the scales, and these flora became so large and numerous that the genuine parasites were more and more difficult to find. Microscopical examination of the organisms of the crusts, however, rapidly reduced the number of distinct forms to two, which were so frequently found, and in such large quantity, that they attracted the attention before all other parasites. They were the " flask bacillus" (or Melassez' spores), and the morococci. While in many cases both flourish in the horny substance, the flask bacilli were found especially frequently and abundantly in the crusts and scales of the hairy scalp, and the morococci in the crusts and scales from other parts of the body, particularly in the moist and weeping forms of catarrh—the forms generally called eczematous.

Further examination of sections again reduced the number of organisms, until the morococci, with overwhelming majority, came forward as the constant companion of seborrhoic catarrh.

I made more than thirty sections from different cases of this affection, in which the morococci were exclusively found, and in a location that can explain the principal manifestations of catarrh—above all parakeratosis.

I was also able to produce in man, by inoculation of morococci,* vesicles which were precisely the same histologically as the vesicles of eczema in certain acute outbreaks, and in which the morococci were present within the leucocytes, in the same position as in that singular primary form of vesicular eczema.

I observed that erythema with alopecia followed the inoculation of morococci upon rabbits, and was able at all events to demonstrate the pathoforic action of these organisms, or more accurately their eczematoforic action.

I have not been able, up to the present, to obtain similar results with pure cultures of " flask " bacilli.

These bacteria, first made the subject of study by Melassez, are always present in such great numbers in every case of seborrhoic catarrh of the scalp, that one is forced to attribute to them, at least for the scalp, the *rôle* of a deleterious agent.

It may be that they alone can cause a slight pityriasis and thus prepare the way for the morococci, or that they aid in breaking up the horny layer, already softened by morococci, or that, finally, they produce a flow of fat—a seborrhœa. With a mere saprophytic existence the constancy of their occurrence in all kinds of seborrhoic catarrh of the scalp would not be likely to take place. The future must decide this question. But even at this stage, I can say, from my experience, that there can be no question as to the flask bacilli, which are so often found upon non-hirsute parts of the body affected with seborrhœa, being the single cause of the seborrhoic affection. They are too often *not* found while the morococci are about. I am, therefore, rather inclined to ascribe to them an auxiliary *rôle.* The surprising fact that the morococcus, so often present in all so-called eczemas, should have been so frequently overlooked, can perhaps be explained by remembering that, while the morococcus was indeed often seen, yet it was always mistaken for the staphylococcus, and thereby the conclusion was drawn that it might be disregarded. This mistake not only retarded the study of the etiology of eczema, but also led to the general belief that the staphylococcus albus (et aureus) was everywhere present upon the sound skin. This notion is as fundamentally false as that the epidermis harbours countless numbers of saprophytes. There are, indeed, a large number of saprophytes, but all kinds are only accidental, and are present only in particular instances. They are often found in cultivations of scales, owing to their proliferation, but extremely rarely in sections of scales.

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* Unna, Kunstliche Erzeugung des Ekzems und d. Alopec. pityrodes, *Monats. f. p. D.*, 1892, pp. 413 u. 465.

In seborrhoic eczema the morococci generally exist alone, except that the flask bacillus dominates in production upon the scalp. Occasionally, in very moist cases, a streptococcus can be observed, and less frequently, that is to say, *proportionately* very seldom, the true staphylococcus of suppuration is found, occurring at the same time with the other micro-organisms. The morococci are distinguished from the staphylococci by their fine but firm mucoid capsule, thus producing the regular "grain" of the accumulation, the inclination to the formation of incompletely divided large double and quadruple cocci, resembling giant cocci, and, finally, of large mulberry masses which infallibly indicate the existence of morococci. Their growth is dependent upon the presence of oxygen. They do not grow in cultures in the depth of the inoculation puncture, and they lie always near the surface in crusts and scales. That from this point they can have a progressive penetrating inward action we can understand only from the study of chemotaxis.*

If by chance they find a good nutrient soil in the horny layer, they multiply themselves, and softening the horny layer, their toxine finds an entrance into the prickle layer, and attracts to itself an exudate of sero-fibrinous character, mixed with a few leucocytes. In this way they maintain parakeratosis, which now and then, particularly after artificially produced hyperæmia, mounts up to the formation of vesicles.

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* Unna, "Inflammation and Chemotaxis," *St. Louis Medical and Surgical Journal,* July, 1893.

Thus an over-nourishment of epithelium and cutis cells, and a moderate œdema of the cutis, will be kept up by the exudation, and in this way all *symptoms of chronic eczema* are to be explained. By the experiment of inoculating *under* the horny layer we know that, besides chronic eczema, there is also an acute vesicular affection developed by the morococci upon the otherwise sound non-parakeratotic epidermis, but which is certainly far removed from "das acute ekzem" of Hebra. We find it very rarely as the forerunner of chronic eczema, and can, in fact, isolate it entirely. Without bacteriological and histological examination no dermatologist would be safe in acknowledging this vesicle as eczematous, for it lacks the characteristic of chronic eczema—parakeratosis. This second paratypical vesicular form, which does not develop in parakeratotic epidermis, can only be produced when the skin is, so to speak, surprised by the morococci in forced inoculation, as by scratching. The activity of the morococci diminishes naturally, and they soon die and are carried off by the leucocytes in which they at first multiply; the parakeratosis disappears, or some of the morococci remain in crusts, and become later the cause of chronic eczema.

We now come to the fourth cardinal symptom—the abundant flow of fat upon the epidermis. Is this also dependent upon the morococci? To this I am sorry to say that I can still give no satisfactory answer.

I do not think it unreasonable, after our modern idea of chemotactic remote action, to believe that there exists a sebotaxis, for we know that a serotaxis and a fibrinotaxis from the skin is a sure result of the settlement of morococci in the horny layer.

This would mean a chemotactic explanation of seborrhœa; for as long as the mouths of the follicles are blocked by the swollen horny layer (Piffard, Melassez, Schuchardt, Unna), the fat comes from the coil glands, but, after complete loss of hair, from the sebaceous glands as well. Indeed, there is a histological fact which seems to speak for sebotaxis, and is, I believe, to be explained only upon this ground.

In many cases all the lymph spaces of the skin affected with seborrhœa, from subcutaneous tissue to epidermis, are filled with fat, but in a direction opposite to that usually taken by the stream of fat which goes from the coil glands to the hypoderm.

But if we accept a sebotaxis, do the morococci cause it? This question is the chief one of seborrhoic eczema. By no means do the morococci always act sebotactically because they are found, not only in seborrhoic eczema, but also, so far as my investigations have gone, in all eczemas accompanied by parakeratosis, even if they are non-seborrhoic.

To be sure, I found morococci first in seborrhoic eczema, but after I had observed them to be always present, and had acknowledged them as the cause of the affection, I also found them in *all* eczemas examined by me histologically as well as bacteriologically.

The following possibilities are to be considered in this connection:—(1) Either there need be no sebotaxis—seborrhœa is in certain individuals a manifestation entirely independent of parasites, and the morococci settle upon a place affected with seborrhœa, and cause thereby an eczema of peculiar nature—a seborrhoic eczema; or (2) on many persons the morococci produce ordinary eczema; in some definite regions simply this, in other regions partly this and partly secondary sebotaxis, consequently are eczema seborrhoic in character, and finally, on other individuals, only the latter—sebotaxis; or (3) the morococci, always produce only a common eczema, combined here and there perhaps with another as yet unknown organism (*e.g.*, the flask bacillus, or a very small bacillus, which I have frequently found), which acts sebotactically, and the seborrhoic eczema resulting is, therefore, a mixed infection.

The cause, in the first instance, must remain obscure, because no one can explain from internal cause the origin of a seborrhœa, either regionally limited, or appearing suddenly together with an efflorescence upon all possible places.

This view of many authors, the most prominent of whom are Brooke and Brocq, I cannot accept, because I believe that hyperidrosis oleosa, a simple functional disorder when it exists without eczema, can and must be distinguished from the seborrhœa of seborrhoic individuals. For me, it is not the hyperidrosis oleosa that complicates eczema, but something which the clinical part of this work will show.

In the second case the morococci, always found in seborrhoic eczema, would be the single cause of parakeratosis as well as of the flow of fat, but whether both are produced by them simultaneously would depend, in individual cases, upon the location and the individual peculiarities of the skin yet to be considered. This means the number and size of the fat glands and the thickness and firmness of the horny layer; the habitual artificial drying or inunction procedures, the greater or less activity of the normal secretion influenced accidentally or by occupation, and the like. By these circumstances the symptoms of seborrhœa would be made more prominent or more obscure, the diagnosis easier or more difficult. Such a view is more acceptable to me than the first; it at least admits of clinical and experimental investigation. If it were true, however, it would mean that only seborrhoic eczema is complete eczema, non-seborrhoic, incomplete.

In the third case fibrinotaxis and sebotaxis would be the results of different organisms, and would thus be more suitable for examination by all bacteriological and histological methods. As is always the case, when a complicated manifestation can be referred to a combination of simple causes, we are inclined to be entirely content with such an explanation. This explanation would mean that, after chronic eczema had disappeared, other organisms than the morococci (particularly the flask bacillus) are to be found in the seborrhœa which remains.

The distinction between the last two views, the only ones that appear possible to me, will doubtless be established by future investigation, and the position of doubtful forms and the extent of seborrhoic catarrh be thus influenced. Agreeably to the second view, pityriasis capitis is only a non-fatty, incomplete seborrhoic catarrh, in which sebotaxis, owing to some unfavourable circumstance — as a great quantity of scales—had not become fully developed. According to the third view, this would be an entirely different etiological affection, which, if the exciting cause of seborrhœa were combined with it, would constitute the starting point of a progressive seborrhoic affection.

In spite of this confusion, I think it is clear that we have reason to treat together the clinically interchangeable forms, even if perhaps they be later distinguished as mixed infections.

Clinical.—A great many eruptive forms, and other changes of the skin, belong to the clinical manifestation of seborrhoic eczema or seborrhoic catarrh. This fact, and every attentive observer will acknowledge it, rests upon the circumstance that, in most cases, the disease shows a striking regularity—that is, a regular progression over the surface of the skin from the vertex downward.

For him who sees in daily practice the progressing typical cases always going forward, and has thus verified the often varied picture of this eczema, it is not difficult to recognise the unusual atypical course and occasional forms of the disease. This knowledge is of the greatest importance in daily dermatological practice. The instruction thus gained goes far towards reconciling the different dermatological schools, because, while its purely local and parasitic nature is evident from the good constitution of the patient and rapid healing by purely topical and antiparasitic treatment, it is just in this disease that the importance of the general dermal constitution, as well as the periodical changes of secretion and blood-supply of the skin, are demonstrated; and similarly the influence of heredity, as well as definite nervous excitants, are included in our knowledge.

In all typical cases, the hairy scalp is the principal seat and starting point of the disease.

NB

It is very probable that the parasite finds here a convenient soil which guarantees for it, under favourable external circumstances, a lasting saprophytic existence, and, with the appearance of better nourishing material, urges it on to a genuine parasitic vegetation, which manifests itself as a moderate or severe catarrhal disease of the epidermis.

In contrast to the fungi of tricophytosis, soils favourable for the nourishment of the excitant of seborrhoic eczema exist throughout life. Even a few weeks after birth we encounter seborrhoic crusts of the head resting upon a swollen epidermis, and, with them, the same organisms as are found in the hyperæmic scaly lesions upon the bald heads of old people. So that, in this locality, the skin is, through life, the principal stronghold and point of election of the germs of seborrhoic eczema. Just as the wild animals of the forest, if they venture out upon the plains, easily fall before the weapons of the hunter, but in the depths of the woods remain concealed, so is the pursuit of seborrhoic germs upon the bare skin of the body incomplete and vain if unaccompanied by " beating " the scalp.

Elliot has published a very welcome paper upon seborrhoic eczema, in which he states that most of the typical forms of the disease occurred in young adults, from 20 to 30 years of age. But one would be very far from correct if he believed, on the strength of this, that a marked inclination to severe seborrhoic outbreaks is first manifested at this time of life.

In most of such cases, a careful history will show that the patients have been seborrhoic for a long time; that, as sucklings, they had "milk-crusts," or perhaps seborrhoic eczema of the face; that, as children, they possessed an exuberant growth of hair, but also a great deal of dandruff; that the hair fell out after some intercurrent-febrile disorder (measles, scarlatina, typhoid), "and since then it has never grown well;" and that they frequently consult the oculist on account of crusts on the ciliary margin, and constant irritation of the conjunctivæ; that, after violent exercise, a rapidly spreading pruriginous eruption appeared upon the parts of the body lying in apposition (axillæ, buttocks, cruro-scrotal folds, &c.)

By bringing together these small details, often overlooked, the physician can demonstrate to the patient the red strand that has run through his whole previous history—a transitory eczema—and can for himself observe the presence of a germ on the one hand, and the importance of a definite predisposition of the skin on the other.

If the patients are children, presented by parents who ply the physician with the question so often and so trippingly put, and so difficult to answer—" Why *their* child should have a skin disease?"—it suffices, in ninety cases out of an hundred, in order to complete the family history, to glance at the bald head of the father and the incipient rosacea of the mother, and from this to convince the astonished parents that the "milk of the wet nurse" is not to blame, but a disposition of the skin inherited from *themselves.*

It is difficult at present to fix definitely the absolute frequency of seborrhoic eczema; the reason is simple, but well worthy of consideration. Each observer states from his own experience, that the longer he studies the disease, the more frequently he sees the variability of its clinical manifestations in families and generations; that it appears to him that, year by year, the number of cases of seborrhoic eczema increases in relation to the sum of eczemas in general.

I have before me now a series of communications by letter from prominent dermatological colleagues, who had made themselves acquainted at my clinic with the principal features of seborrhoic catarrh, and who previously had had relatively infrequent opportunities in their own sphere of observation. They express with frank surprise that cases of seborrhoic eczema occurred much more frequently than they had thought, and from day to day became more frequent. It must not, of course, be understood that everywhere an actual fluctuation so marked occurred in the diseased condition, but—and here all the colleagues alluded to are at one—that wider personal experience teaches us to recognise a large number of skin affections, otherwise classified, as belonging to seborrhoic catarrh.

This personal standpoint in diagnosis will shift the position of the following diseases:—Hypersecretion of fatty nature, rosacea, most cases of badly classified and etiologically obscure moist eczemas, pseudo-trichophytoses, atypical cases of pityriasis rosea — so-called eczema marginatum—certain special annular varieties of psoriasis, &c.

In the year 1891, Elliot gave the proportion of the cases of seborrhoic eczema seen by him up to that time, to the total number of eczemas treated during the same time, as 232 : 815 (or about 28·5 per cent.)

I venture to say that to-day his percentage is larger, and will coincide with my own experience, in which certainly more than one-half of all eczemas are of seborrhoic nature. At all events, we have to do with an ever-broadening disease of the skin.

Most patients, as has been before mentioned, seek the aid of the physician only after the seborrhoic catarrh has lasted for a varying length of time in a more or less latent manner.

Ordinarily, it was thought to be a simple dry, or oily scaliness of the scalp, to which the patient attached little weight, until it became more marked, or upon individual places (particularly upon the vertex and in front of it) itching appeared, with the presence of small crusts, and, after scratching them off, a small quantity of blood and serum appeared.

In other instances the patient is troubled with a marked and rather rapid loss of hair or by the appearance in the region of the vertex of thick, isolated, partly greasy, partly moist crusts which, when removed, left a moist tender erosion. Or there appears suddenly, particularly about the temples and ears, an irritation and moisture of the skin, the scaly or crusted dry surface of the scalp becoming slowly altered as it approached the moist surface, and gradually merging into the character of the latter.

In still other cases the margin of the seborrhoic process proceeds from the scalp downward over the hair border at the forehead or the neck, and develops upon the bare skin very striking and disfiguring red nummular papules, covered with scales or crusts, which follow the hair line around the head like a crown. Or the skin of the face is covered with red or pale scaly spots of the character of pityriasis capitis which keep up a permanent congestion in this region.

In all of these cases the explanation of the new trouble lies in the earlier dry or oily catarrh of the skin. The patient himself suspects the dependence of the new upon the old, and is not surprised when the treatment is directed against both at the same time.

But it is a different matter if the diagnosis of seborrhoic eczema be made, not from changes *in situ*, but from objective signs of the affection occurring in other cutaneous regions—*e.g.*, the anus or the hands. In these localities the origin of the morbid changes is not so evident, and the patient has formed no idea of it, and is incredulous until the bridge between the one and the other lesion is pointed out in the shape of fine scaly and itchy spots on the face, neck, and arm flexures, which had hitherto escaped his attention.

The significance of these simple spots of so-called pityriasis alba, as satellites of pityriasis capitis, on the cheeks and neck of women, and in the beard and on the shoulders of men, was first brought out by the study of seborrhoic eczema.

We are most concerned in daily practice with the subacute proruption of the catarrh from its stronghold in the scalp. Only in a small number of cases seborrhoic eczema of the eyelids, the axillæ, the anus, the genito-crural folds plays the *rôle* of brooding place from which extension occurs.

Leaving aside such cases, seborrhoic eczema is usually limited in extent to the upper half of the body. It often appears on good nutrient soil such as is offered by oily, easily perspiring skin, upon the shoulders and on the thorax in front and behind to the line of the umbilicus. A favourite locality for the different forms of seborrhoic eczema is the region of the sternum and the interclavicular spaces in front and interscapular region behind on the trunk. Similarly, the eruption occurs over the spine of the scapula, in the axilla, and around it. Frequently it leaps over the arms to appear upon the backs of the hands and the fingers, showing a second predilection for the space between the metacarpal bones of the thumb and index finger. The combination of dry pityriasis capitis, oily, crusted lesions of the sternal region, and the partly moist eruption of the backs of the hands, makes a very frequent and very instructive trio. Of this kind are the milder proruptive forms of seborrhoic eczema. We find, besides pityriasis or so-called seborrhœa of the scalp, on places of predilection, characteristic oily papules in other localities, transformations of such into oily or moist, crusted or weeping lesions. In the course of time these cases may gain a universal extension through successive advances, partly in a direction downward to the legs, genitals, and anal region, partly by the appearance of new proruptions between the old ones. The dryer these lesions are the more they resemble psoriasis guttata, the more moist the more the similarity to a diffuse non-seborrhoic eczema.

Under favourable conditions, however, this exanthem, in spite of its extent, can preserve a uniform character and produce approximately similar lesions in different regions of the body. Nevertheless, polymorphism is the rule, and admits of the observation, in particular cases, of the transition into one another of the pityriasic papulo-squamous, papulo-crusted, dry, oily, or weeping forms. But polymorphism never goes so far that vesicles grouped or wreathed, larger and microscopically easily distinguished, or firm, pointed, pruriginous, eczematous papules can be found arranged between old lesions as satellites, or advancing young marginal lesions. Similarly, the old nummular or annular forms cannot be resolved into groups of such vesicles or papules. The vesicles of seborrhoic eczema remain always small, easier demonstrable microscopically than macroscopically, are not found isolated and independent, but only as representing the acme of crusted or weeping forms. The papules are never acuminate, but flat, gradual rather than abrupt, and never much elevated above the surface.

A second general characteristic of the lesions of seborrhoic eczema is the tendency to serpiginous extension and healing in the centre. The small and elegant (circumscribed or petaloid), as well as the large nummular varieties, transform themselves into more or less complete rings, and by confluence yield circinate, polycyclic chains, and as such can spread over a large area of the body.

This tendency is very pronounced on the trunk, especially on the front of the thorax, where, as is well known, psoriasis likes to spread in rings and festoon-like wreaths, and in this exhibits a marked similarity to annular seborrhoic eczema.

A third peculiar symptom of seborrhoic ezcema is a certain well marked, yellowish discoloration of the skin.

This appears most strikingly around the lesions, particularly after the lesions have healed, and varies between yellowish-grey, pure yellow, and yellowish-red, rarely yellowish-green or brownish.

The papules and patches of the efflorescence itself take on the yellowish shade, the bright, fresh red colour being present only during the congestive stage; this changes to a bluish or bluish-red, and, after some time, the darkened papules become dull or faint yellowish-red.

Seborrhoic catarrh further distinguishes itself by the slight development in general of subjective symptoms. Usually there is itching only on the affected places on the head, in the axillæ, on the sternum, in the anal region, and, in general, where there is an abundant perspiratory and unctuous secretion. Otherwise the lesions itch only with very rapid extension of the disease. In the weeping and crusted forms, a feeling of soreness is produced after removing the crusts. I have occasionally noted, in acute attacks, especially of the lower parts of the trunk, on the neck, and in the genital region, a marked, almost neuralgic, pain, and a sensibility to touch entirely out of proportion to the local unimportant symptoms.

The regional divisions of the skin have an undoubted influence upon the configuration and colour of the eruption.

The before-mentioned greater blood-supply and the increased formation of crusts with the transition of the affection from the scalp to the bare skin, is very characteristic. The transition to the flexures of the limbs, to the scrotum, and to the region of the anus, is always combined with a greater tendency to weeping.

The lesions in the sweat furrows, before and behind, are almost always covered with greasy crusts, while, at the same time, papules upon other parts of the trunk show drier scales. Also the lesions of the flexor surfaces ordinarily possess looser, greasier scales than those of the extensor surfaces of the extremities.

This latter, very visible regional, difference easily leads to the belief that polymorphism, so far as it rests upon the fat content, depends alone upon these divisions of locality. But it is not altogether true. There are cases in which papules, covered with greasy scales and greasy moist crusts, extend from the seat of predilection to the extensor aspects of the extremities, and to other parts where the skin is not especially oily nor sweat glands numerous. There exists, in a word, *a local seborrhoic production of fat limited to the lesions, which is independent of the regional fat function.*

The effect of the so-called secretory function of the skin is equally observable if, indeed, appearing less under regional influence. It can become of moment only through a periodical variation in this function. In most cases it is apparent by the change of position of the lesion from marked temperature variation, and the consequent rapid change from a profusely sweating to a dry skin. Sweating, and wearing for a long time sweat saturated underclothes, particularly woollen, facilitates not only the spreading and inoculation of seborrhoic eczema, but also aggravates all the symptoms—the hyperæmia, the amount of fat in the scales, and the inclination to weeping—that is, sebotaxis and serotaxis.

But more chronic changes of the exanthem, which accompany changes of fat and sweat secretion, are to be observed, as in the case of very fat people who have become rapidly thin by intercurrent disease or dieting. The only possibility of seborrhoic eczema being permanently influenced by internal therapy rests upon such an indirect influence upon the secretory conditions of the skin.

Circulatory conditions, particularly as relating to eczema of the head and lower portions of the extremities, are of the greatest importance.

The *rôle* which hyperæmia plays in promoting seborrhoic eczema of the head in children and venous congestion of the legs, is well known, and of still more importance is the effect of periodical congestion or flushing of the face upon the origin and maintenance of rosacea seborrhoica.

The course of seborrhoic eczema, in point of time and duration, in opposition to its local course, is irregular, and follows no law. At each station the process can stand still, and, even in the minor forms, undergo a spontaneous retrogression.

But with each accidental improvement of the nutrient soil, be it from a hyperæmia or a secretory change, with melting of the horny layer or with its fat impregnation, the existing eczema becomes worse and goes on to new proruptions. Indeed, at one bound it can become from a local and limited eruption a universal lesion of the skin. These extreme cases are, however, rare, and are confined in their outbreaks to the beginning of the warm and of the cold seasons of the year, the latter on account of the woollen underclothing put on at that time.

Ordinarily, the progress of the disease, and invasion of a large part of the body, goes on for years, and is made up of remissions, periods of slow, unnoticed extension, and subacute outcroppings. In many mild cases, in which the skin as a whole does not favour the settlement of seborrhoic eczema, one must gather together all the *disjecta membra* of the process from many unimportant symptoms, often mere traces. But this painstaking, aided by a precise family history and a knowledge of the earlier condition of the skin, will be rewarded by the discovery of the intimate dependence of scarcely observable signs, and will confirm the observer's conviction of the common genesis of multiversant processes.

Now that we have rapidly reviewed the course of seborrhoic eczema, we turn to the description of simple and especially characteristic forms. Here, as in all polymorphic dermatoses, the simple must be practically distinguished from the combined elementary forms, where the clinical picture is not for the most part composed of simple elements, but of the latter—the synanthems.

The simple elementary forms in the lowest grade of the disease are of diffuse extent. They are as follows:—

I. SIMPLE ELEMENTARY FORMS.

As existing in seborrhoic eczema only in macular forms, independent and uncombined.

1. Yellow Discoloration of the Skin (yellowing).—This is often found as the first symptom of the disease before the development of any other lesion upon the faces of persons suffering from pityriasis capitis or seborrhoic crusts of the head. The yellowing occupies the middle of the face, the sides of the nose and mouth, giving to the folds (nasal, naso-labial, and labio-mental) a pale or dark yellow colour. The surface of the skin is here and there shining to the sight and oily to the touch, but in general is dull and lustreless, and does not give up more oil than usual to tissue-paper.

Sometimes the yellowing extends from these folds of election to the neighbouring parts of the face, particularly the chin, but is not marked. Diffuse yellow pigmentation occurs, with seborrhoic lesions around the arm-pit, particularly upon the wall formed by the pectoralis major; then in the anterior and posterior sweat furrows of the body—that is, in the sternal and interscapular regions, the arm flexures, the inguinal and anal regions—in general, wherever large bunches of modified coil glands lie in the depths, or where their secretion is dammed up at the periphery—briefly, in all localities where cutaneous surfaces are in contact and are rich in fat.

This yellowness usually exists unnoticed by the patient, although there are cases where a periodical stinging in these parts of the skin is present, and after a time yellow flecks are seen upon the face now and then, set in cloasma-like frames. Such symptoms indicate that the yellowness is concerned with a hypersecretion of the fat-supplying coil glands, but not with this alone, for, in the ordinary hyperidrosis oleosa of the palms of the hands, there is no yellowing of the integument.

We must conceive the cause of this condition as a *paridrosis* oleosa. Perhaps a change of the ordinary kind of fat to a highly coloured fat takes place. It is for this reason that I cannot agree with the authors who conceive seborrhoic eczema simply as an additional product of common eczema and common hyperidrosis oleosa. Certainly, the seborrhoic nature of the later lesions which appear upon favoured soil, is accounted for by the already described seborrhoic status of the region.

But we have already seen that not only a regional seborrhœa appears, but a local—an efflorescence always limited to the local circuit of the disease. Accompanying this, there is a corresponding localised yellowness, which contributes not a little to the characteristic appearance of many lesions. When it comes with reddened patches and papules it is difficult to distinguish, but is, on the contrary, easily observed when appearing upon places where the patches and papules have healed, and still better in contrast with the red colour of those where the affection has had a serpignious progress, and has left the yellowing behind.

Further, circinate chains, made up of segments of circles, enclose on their concave side great yellow plains, the colour of which merges into that of the red wreaths, as well as that of the sound skin on the convex sides of these wreaths or chains. It cannot, therefore, be treated as a yellow shade left after an access of blood, because all intermediate stages of the re-absorption of hæmoglobin are absent, and we find histologically no sign of diapedesis of red corpuscles.

Ordinary pigment must, therefore, be excluded as the cause of the yellow colour, and likewise the brownish-yellow colour effect produced, as in granulomata, by a preponderance of plasma over the collagen substance, cannot account for it. It is easily set aside from histological grounds, as well as clinically, by the pressure of the diascope (a small glass plate), by using which, a cellular infiltration appears more marked in its own peculiar colour, while the yellow colour remains unchanged. The nature of this yellowing is, therefore, still obscure, and needs a thorough clinical and histological investigation.

2. **Hyperæmic Spots.**—A superficial hyperæmia accompanies the seborrhoic lesions in proportion as their inflammatory and proliferative character is marked. These lesions appear in all variations of intensity, from the small scaly normally coloured spot, to the crusted coin-shaped papule which, after the crust is removed, shows a dark yellowish-red, swollen base, and to the weeping, often blood-red, seborrhoic eczema of the axilla. The red colour is usually added to the local yellowness and produces a fresh yellowish, glancing red, which in many instances, in opposition to the coppery-red of a syphilide, furnishes a diagnostic sign.

Only upon one region, the middle of the face, remarkable for its susceptibility to paresis of the arteries and dilatation of the capillaries, does hyperæmia appear diffusely in an independent elementary condition, and goes on to a more marked development than could be produced alone by external or reflex stimuli (warmth, ingestion of food, indigestion, &c.), or by an existing seborrhoic catarrh. Common rosacea must be acknowledged in a largely preponderating number of cases to be the resultant of two stimuli meeting at the same point, one of which certainly arises from the seborrhoic catarrh in the neighbourhood, usually the scalp, and to cure this without reverting to surgical measures is one of the greatest triumphs produced by the study of seborrhoic eczema.

Fine scaly spots, intensely red, first appear in the cutaneous region occupied by the rosacea. This region includes the nose and cheeks, assuming the well-known butterfly form. A diffused capillary congestion spreads out from this region, where the seborrhoic catarrh first gained access, and progressing, surrounds the primary efflorescence which at once becomes unrecognisable. Within this area of hyperæmia, venous angiectases appear almost immediately, generally coursing up perpendicular to the nasal furrows, and bestowing upon the epidermis a red mottled appearance.

Later the deep vessels of the skin become dilated, looking blue in the depths, so that the composite colour effect, from being bright and yellowish-red, becomes bluish-red and violet.

That, excluding periodically active, external, and reflex stimuli, this extraordinary vascular paralysis is chiefly produced by the permanent stimulus of seborrhoic catarrh, is proved by the immediate and surprisingly favourable results of antiseborrhoic treatment upon the dilated blood-vessels, especially upon the capillaries.

3. **Scaly Spots**—Pityriasis.—As in hyperæmic spots inflammatory hyperæmia attained its highest limit, so in the scaly lesions parakeratosis reaches perfection of development.

This elementary form, described in the books as pityriasis alba, represents pityriasis capitis diffused.

It consists in a more or less large accumulation of scales upon a quite pale or slightly reddened skin. According as the parakeratosis shows a preference for the surface epithelium or the follicular mouths, these scales represent either horizontal laminæ bored through by hairs, with small cone-shaped processes on the under surface, or cuff-like projections, chalk-white horny tubes surrounding the hair, the scales standing out horizontally like wings.

Ordinarily, after scratching off the scales, the retained sebaceous secretion oozes out, as it could not before escape from the follicular ducts blocked by the scales.

On the bare skin of the face, neck, shoulders, arms, and upper part of the chest, in connection with pityriasis capitis, we find desquamating spots, generally sharply circumscribed and, on account of the small size of the scales, often not easy to discover. Their pressure will be brought out better by oblique light. In these are seen all transitions, to hyperæmic, scaly and smooth, or to greasy, scaly and crusted. These simple pale, dry, scaly spots, in their clinical relation, play an unimportant part, as they are rarely noticed by the patient, but they are actually of the first importance as being diffused secretly increasing satellites of a latent seborrhoic catarrh, and as the precursor and starting point of the most severe forms of the disease.

If any elementary form can be established as primary and real, it is for seborrhoic eczema, the scaly spot.

But not only in a clinical, but also in an histological aspect, does the study of pityriasis diffusa and circumscripta possess a wide-spread importance because, from these primary forms, it must be decided whether or not the present unity of seborrhoic catarrhs can be maintained. This concerns principally the transformation phenomena, and the question whether or not the dry, purely scaly catarrhs are to be viewed as portentous forerunners with which sebotaxis becomes combined on the way, thus making a mixed infection, and, by virtue of the union, producing seborrhoic catarrh.

Continual cultivations and endeavours at transmission will slowly bring light upon this question. In the meantime, clinical and histological statements are susceptible of interpretation in many different ways.

II. SYNANTHEMATA.

Combined Elementary Forms.

In the synanthems of seborrhoic eczema is the true richness of its varieties developed. Thus we have macular, papular, scaly, crusted, dry, greasy, and weeping types, which, in different combination, make up the polymorphic morbid picture.

1. Typus Circumcisus—*The Peritomic Lesion.*—This elegant synanthem is almost entirely limited to the upper half of the trunk, before and behind, and upon the shoulder girdle. Its point of preference is the sternal region.

Before its dependence upon seborrhoic eczema was known, it had received an excellent description from Besnier. It appears in patches, numerous, and distributed rather equally over the regions of the skin for which it shows an elective affinity—the spots or patches are from the size of a pea to that of a lentil, yellowish-red to brownish-red in colour; rough or covered with very fine dry or greasy scales—the principal peculiarity consists in the thin, sharply-defined margin. This is here and there covered with extremely fine, circular, elevated ring-like crusts, which are made up of a few horny lamellæ and much fibrinous exudate. The crusts generally fall off, or are rubbed off by washing, &c., and then the lesion presents a fine circular depression, a furrow surrounding it on all sides. This circumscribed patch can increase in size concentrically, as the circular furrow goes in advance and leaves behind a desquamating surface. But this growth is not often observed; many patches seem to spring up of the same size, and rarely ever grow to be larger than a lentil.

This synanthem combines simple parakeratosis with more or less seborrhœa in the middle of the patch, and spongy transformation of the epithelium at the position of the peripheral furrow, with consecutive crust formation upon the circumscribed area. Epithelial growth, hyperæmia, œdema, and infiltration of the cutis are very slight or entirely absent. This type is fixed upon the surface, the follicle playing no part in its construction. It is characterised by the culmination of the inflammatory symptoms upon the periphery of the lesion, by the formation of a closed ring at the periphery, by the fact that it never moves forward by leaps; and, finally, that it never develops into unilaterally progressing serpiginous or circinate forms.

2. **Typus Petaloides**—*Leaf-like Macules and Papules.*—This synanthem also produces peculiar, elegant figures, with preference for the sternal region, yet extending under some circumstances over the entire trunk and even down to the extremities.

Before it was known as a variety of seborrhoic eczema, it was described by Erasmus Wilson as *lichen annulatus serpiginosus*, and later under still other names.

The lesions are macular but often flat papules, the size of a lentil, yellowish-red, and covered with greasy scales. The lesions generally begin at the middle of the sternum, and show, in contrast to the foregoing synanthem, a great inclination to *peripheral and eccentric extension.*

The patches or papules, at first about the size of a lentil, develop into partially open rings, then half rings, and, finally, short segments of circles. The progressing marginal parts are about 5 mm. broad, inclining sharply to the convex side—if they are papular, more abrupt than within toward the healed centre; possess a fresh yellowish-red colour, and are frequently covered with fine greasy scales which always leave the extreme periphery uncovered. Upon the papule, freed from scales, small, darker-red, often depressed points are almost always to be seen; they are the gaping mouths of follicles just within the periphery. As, in the foregoing synanthem, the external margin marked the height of the inflammation, so, in this, do the mouths of the follicles.

This shows itself during the serpiginous progress of the affection which does not creep regularly, concentrically forward, but advances with small circular leaps, attacks the adjacent follicles, and includes them within its border.

The zone of central healing is particularly characteristic, as it shows a specific yellow colour. It is opposite the advancing margin, generally somewhat depressed, smooth, and dull, seldom scaly or greasy, and shining. The lesion spreads and often exists latently upon the oily and hairy sternal region for years. Quite often, under favourable circumstances, it spreads rapidly until the entire thorax is covered. The extension occurs partly by serpiginous advance and confluence of old lesions, and partly by the development of new lesions upon sound parts of the skin.

By confluence, the overcrowding borders of the segments of circles become obliterated, while the yellow centres run together to form a large yellow plain. In this synanthem a pronounced parakeratosis accompanies an epithelial growth (akantosis) and a specific yellow colour.

Hyperæmia and cellular infiltration of the cutis, while not considerable, are yet more developed than in the preceding variety. Spongy transformation of the prickle layer occurs only at single points, especially at the edges of the follicles, and then the scales take on the character of moist crusts.

This type is very much inclined, by accentuation of akantosis, seborrhœa, or spongy transformation, to change into markedly papular, nummular lesions, covered with greasy or moist crusts. The name of this variety is derived from its resemblance to the variegated leaf of a flower, the red, broadening, elevated border and yellow hue warranting the comparison.

3. **Typus Nummularis**—*Coin-shaped Papule.*—In this synanthem the lesions consist of sharply defined, coin-shaped or discoid papules; not as in the foregoing synanthems limited to the upper part of the trunk, but occurring over the whole body.

Universal acute and chronic eruptions are generally of this type. The more rapid the appearance of the lesions, the brighter and fresher will be their colour. They are round or oval, 1 to 2 and more centimetres in diameter, at first flat, inclining gradually to the healthy side, later sharp, defined, and more prominent. Pruriginous sensations are present in the beginning, and later only with strong sweating. The papules are always covered with scales or oily crusts of very varying thickness and consistence, and continually varying amount of fat contents. The outer margin is generally free, and makes a red contrast with the yellowish-white or yellow, scaly centre. If the papule increases in size peripherally, it does so by a regular creeping onward of the margin, and never under inflammatory conditions of the latter, for example, springing up of vesicles. But often small satellite papules unite with larger ones and form discs, at first irregular and angular, later more regularly rounded. The particular regions of the body, as the hair line at the forehead and back of the neck, around the axilla and anus, the papules are usually grouped, or in rows or rosary-like strings, thus forming on the forehead the well-known seborrhoic diadem (corona seborrhoica). The scales of nummular papules contain so much fat, that it can be readily appreciated by rolling them between the fingers. The amount of fat, however, varies markedly in each case, and in the region concerned. If the loose scales be removed from the papules, the basal horny layer ordinarily appears smooth and red, not oily, but moist-looking and shiny. In many cases, as in pityriasis, the fatty secretion empties itself from the follicular mouths; in others, serous fluid is secreted at the same time, and may be seen upon the surface of the papule.

Finally, here and there, under the dry or greasy crusts, one discovers a punctate, red, more strongly secreting surface, particularly at the margin of growing discs. These weeping erosions represent the spongy degenerated portions of the horny layer, and are always found during the transition of the nummular form into the weeping. This transition is best studied upon the scalp, where it is not infrequent in adults and extremely common in children.

In the advance from the vertex to the forehead and face, or to the temples and ears, is often witnessed the entire development of the seborrhoic exanthem, from dry pityriasis to crusted seborrhœa, and to weeping eczema. With marked weeping the symptoms, which characterise seborrhoic eczema, disappear. The greasy scales are removed, the fatty secretion escapes the attention, because of the preponderance of serofibrinous exudation; the cushion-like thickening of the papule from epithelial development is lost in the rapid falling off of crusts; the yellow colour disappears in the deeper congestion of the eroded surface. In this stage of eczema rubrum all eczemas, even of the most diverse origin, become necessarily similar. But seborrhoic eczema seldom merges entirely into the weeping form, and almost uniformly its characteristic efflorescences appear in other regions, or, even on the weeping lesions, there will be found typical dry or fatty scales and other evidences of seborrhoic catarrh. These coincident manifestations of the nummular and weeping forms can be observed on the neck, the ears, in the axilla and inguinal region, and upon the scrotum of adults. Thus it is unwarrantable to speak of profusely "weeping" types of seborrhoic eczema.

The discoid, or coin-shaped synanthem, is characterised by parakeratosis, marked seborrhœa, and considerable epithelial proliferation. Hyperæmia and cellular infiltration of the cutis, the latter more marked the older the papule, are more prominent in this than in the succeeding forms.

Manifestly, in the contest, epithelial proliferation and fat secretion are on one side, œdema of the cutis and serofibrinous exudation on the other, and in the weeping portions of the spongy degenerated prickle layer, the victory is to serofibrinous exudation over fatty secretion.

In typical papules covered with oily crusts, the contrast of the superficial content of fat with inflammatory œdema under the crusts becomes visible.

The structure of the following synanthems, after this explanation, needs no further exposition, as their basis is formed from the combination of elementary processes.

4. **Typus Annularis**—*Ring-shaped Papule.*—By serpiginous advance of the coin-shaped lesion, an annular exanthem is produced, which repeats in wider excursion the ring-shapes of the petaloid type. It appears, like the nummular form, in all parts of the body, and originates from this (the nummular type) by depression or healing of the centre. Consequently, we find that complexity of symptoms produced by the combination of epithelial growth, parakeratosis and seborrhœa, modified by the healing of the centre, which depends upon the rapid and definitive death of the parasitic germs. Thus, the borders in this ring-shaped variety are broader, higher, and firmer than in the petaloid, and are covered with larger and more numerous scales and crusts. The lesions spread concentrically, and not excentrically, and far more slowly, and appear and disappear at far longer periods of time than those of the petaloid type. In general, they are drier and less oily than the nummular forms, and, therefore, incline less to the formation of thick greasy crusts, and less to weeping. They closely resemble circinate psoriasis, and are often not to be distinguished from it. Like it, they occasionally cover large areas of the trunk and extremities by large circles, or confluent polycyclic chains or wreaths.

5. **Typus Concretus**—*Concretions of sebum upon an inflamed base.*—Here we have a seborrhoic synanthem that distinguishes itself from all others by a peculiar richness in fat. Indeed, it is for the most part made up of fat.

Here alone is the old view of seborrhoic exanthemata in part justified, as the fat is derived principally from the sebaceous glands, and the inflammatory aspect of the lesion is inconspicuous. We have, however, to deal, not with a mere hypersecretion which would exclude this affection from seborrhoic catarrhs, but with a final product of some seborrhoic disorders. In these cases, the seborrhoic concretion resembles sheets of wax, yellow, yellowish-red, or brownish, or even black, which are firmly adherent to the skin, and which, after they are carefully removed, leave either a normal looking or a moist horny layer. These sheets consist of alternating strata of horny layer and sebum (tallow), the latter composed partly of unbroken sebaceous cells, and partly of expressed sebum and empty sebaceous cell capsules. In these cases the seborrhoic exanthem has been followed by a permanent alopecia, and a consecutive hypertrophy of the sebaceous glands. The follicles previously blocked by the horny layer, gape partly open, and the sebaceous gland secretion, no longer taken up by the hairs, is deposited in layers between the constantly generated horny scales. The contents of the overfilled follicles is thus intermittently squeezed out by muscular contraction.

This final condition of seborrhoic catarrh occurs only as a result of long-standing alopecia and hypertrophy of the sebaceous glands. It is generally seen upon the scalp, the nose, and adjacent parts of the cheeks, seldom in the beard, upon the neck, ears, legs, and genitals. It is uncommonly chronic, owing to the circumstance that it is ordinarily found in old people who are not habituated to the frequent use of soap and water.

It appears now and then, however, in younger people, and even in children, upon the scalp as a sequel of long standing seborrhoic eczema leading to alopecia. The sebaceous masses are naturally not caused by drying up or congealing of fluid oil from the coil glands, because a fluid of a given composition never changes its melting point by mere storing up, and a possible residue of coil-gland secretion of higher melting point after the absorption of the fluid portions, could not explain the presence of the large greasy masses. On the other hand, the existence of a true discharge of the contents of the sebaceous glands, with the firm masses of sebum deposited in layers upon the surface of the skin, with the large and easily demonstrable quantity of sebaceous cells, the gaping follicles, and the hypertrophy of the sebaceous glands, constitutes the best proof that in ordinary seborrhoic exanthemata, where all these symptoms are absent, both in the beginning and in the highest developmental conditions of seborrhoic catarrh, we have *not* to deal with a hypersecretion, and merely that. Besides, the coil-glands are in good condition in these seborrhoic concretions upon an inflammatory basis, and their secretion must be accounted for here as well as in the other synanthems.

In the above described elementary forms and synanthems we have learned the most important features and prominent points of difference of seborrhoic from other eczemas. The manifold combination of these simple forms and synanthems makes up acute, subacute, and chronic, circumscribed and universal prolesions of seborrhoic catarrh. By a similar combination of simple and synanthematous forms, which have not a seborrhoic, but only a general eczematous character, will the picture of eczema be completed.

But this is exhaustively treated of in other chapters of this volume, and will, therefore, receive here only a passing mention. To the latter category belong acute, miliary-like eruptions of vesicles preceding seborrhoic eczemas, the diffused weeping, the scattered and almost symmetrical, herpetiform eczemas in the form of cushion-like, swollen, œdematous vesicular patches, the intertriginous, the keratoid, and fissured eczemas, the so-called occupation—eczema (" Gewerbeekzem "). All these can originate from seborrhoic eczema, and can later be emancipated from their seborrhoic nature to eventually return to it again; or they accompany nearly typical seborrhoic lesions in other regions. Finally, the complex nature of seborrhoic catarrh becomes further complicated by the appearance of important sequelæ, which in part affect the skin as a whole, and in part the accessory organs. The latter, of which hypertrophy of sebaceous glands with alopecia has been already mentioned, is elsewhere described in the chapters on diseases of the hair and nails. I shall, therefore, here simply allude to the fact that, of all the causes of baldness, seborrhoic catarrh, including pityriasis capitis, is the most frequent. The alopecia beginning at each side of the frontal eminence, the middle of the vertex being at first spared, then proceeding backwards betrays from a distance the seborrhoic person as unfailingly as the red nose or the crusted eyelids. As long as the loss of hair consists in a sort of equibalance between shedding and replacement, it is of no great importance, but the prognosis of complete baldness is not absolutely unfavourable because of its seborrhoic origin.

Affections of the nails are not so frequent. In cases of universal, long standing, seborrhoic catarrh, the nails will always ultimately suffer by elevation of the nail bed from gryphosis and by disfiguration of the nail itself, the former sometimes appears in circumscribed seborrhoic catarrh of the hands and fingers. I have observed primary changes of the nail plates only in such eczemas of the hands as were accompanied by marked œdema and weeping, and were not especially seborrhoic in character.

But there is a sequel of seborrhoic catarrh affecting the whole skin of the highest importance, and of very ominous significance. If, in the fundamental processes, parakeratosis appears in the foreground alone, or in overwhelming preponderance over all other symptoms, if the over-irritated epidermis desquamates incessantly, and in ever larger and thicker lamellæ, and becomes forced to repeated reformations, there is sometimes produced a condition which has received the name of *pityriasis rubra seborrhoica*, or the *status exfoliativus malignus* of seborrhoic eczema. No new synanthem is here formed because all previously existing ones vanish in the profuse desquamation, the diffuse seborrhœa and the intense hyperæmia coincident with this condition. Papules are for some time visible and palpable, then become lost in the general homogeneous swelling of the epidermis. This condition is produced by the co-operation of all four fundamental processes in their highest grade of intensity—parakeratosis, seborrhœa, cutaneous hyperæmia, and epithelial proliferation—the latter not giving rise in this instance to papular swelling of the epidermis, which is compensated for constantly by the intense desquamation.

The enormous daily loss of epidermal cells, the steady heat-loss from constant hyperæmia, and the intercurrent itching, can sometimes so exhaust the patient as to bring about his end; yet this condition can be borne for two to four years by those of robust constitution.

Treatment.—It would be superfluous to give a complete therapy of seborrhoic eczema, as this would merely be a reiteration of what has been already discussed in this volume in treating of eczema in general. And especially can all therapeutic measures relating to the final conditions of seborrhoic ezcema, be omitted, as these coincide fully with those of diffuse weeping eczema, seborrhoic alopecia, and pityriasis rubra (dermatitis exfoliativa). The treatment so admirably given of these conditions, occupies another portion of this volume, and to which I refer the reader.

And further, the treatment of severe universal cases of dry eczema seborrhoicum accords completely with that of extensive psoriasis, and distinguishes itself chiefly from the latter by its quicker response to treatment.

I, therefore, limit my therapeutic observations to the treatment of the *insignificant* initial forms, the scaly or crusted exanthems of typical seborrhoic character, and shall extract from the great number of valuable methods of treatment, only the most important and approved for many years.

The simplest and most satisfactory treatment of pityriasis capitis with alopecia, is that by the following sulphur pomade, which was suggested by me in 1882,* and has since become quite popular:—

℞ Ung. pomadini, ...	30, 0.
Sulph. præcip., ...	1, 0–3, 0.
Fut. ung.	—*M.*

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* Unna, Aphorismen über Schwefeltherapie und Schwefelpräparate, *Monat. für prakt. Derm.*, 1882, p. 293.

This is rubbed into the scalp at least twice a week by an experienced hand (the barber's for instance), and, after that, the residue of the old ointment and scales is removed by washing with spir. saponat. kalin. (Hebra). This treatment is expedient as an aid, and as a prophylaxis, during and after the treatment of all seborrhoic eczemas of the body. If the small amount of yellow deposit upon the scalp makes this treatment disagreeable to the patient, a 2 to 5 per cent. resorcin pomade serves as a succedaneum, with the addition of 1 per cent. of sublimate, or 1 per cent. of sulphocarbolate of zinc. If alopecia is marked, a small quantity of tincture of cantharides (2 to 10 per cent.) may be added to the sulphur.

All crusted papules upon the scalp require a more energetic treatment with pastes. These are also indicated in all anæmic and hyperæmic patches on the face, all circumscribed and pelatoid, especially all flat papular and macular seborrhoic exanthemata of other parts of the body, when they become moist. So it may be well said that treatment with pastes stands in the very centre of the treatment of seborrhoic eczema.

I give the preference, in most instances, to the following zinc-sulphur paste :—

℞	Zinc. oxid., ...	pts. 6
	Sulph. præcip., ...	„ 4
	Terræ siliceæ, ...	„ 2
	Adipis benzoat., ...	„ 28*

Fiat. pasta zinci sulphurata. —*M.*

This is very carefully rubbed in, two or three times a-day, in small quantities, so that a part of it takes up a portion of the fat of the horny layer and the rest remains as a powdery deposit upon the skin.

A previous washing, therefore, with a desiccating spirit of soap is advisable and even necessary if there are thick scales or crusts. Under this treatment most cases heal with great rapidity. If after several days the skin becomes harsh and brittle from the sulphur and infusorial earth of the paste, its lustre and pliancy may be restored by using zinc jelly or cold cream.

If it is desired to increase the intensity of the action of the paste in the hyperæmic lesions 5 to 10 per cent. ichthyol may be added or 5 to 10 per cent. resorcin in the anæmic. This is more advisable than raising the amount of sulphur.

In all cases in which epithelial proliferation is marked this treatment is ordinarily insufficient. It must be combined with the use of chrysarobin at the beginning or end of the treatment.

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* Magistralformeln aus Dr. Unna's Klinik, mitgetheilt von Dr. Mielck, *Monat. für prakt. Derm.*, 1890, Bd. 10, p. 28.

A bland but efficient ointment for this purpose is :—

[*] ℞ Chrysarobin,	pts.	5
Acid. salicyl.,	„	2
Ichthyol,	„	5
Vaselin. flav.,	„	88

Ung. chrysarobin comp. —*M.*

When the lesions are very general this ointment must be rubbed in twice daily and woollen underclothing must be worn.

Such lesions as are circumscribed are, after the inunction, according to the desired intensity, covered with a thin layer of cotton wool or a layer of cotton wool and a rubber tissue protective, and the dressing made firm by a few turns of a gauze bandage or by strips of some knit material.

If the well-known action of chrysarobin upon the skin becomes intense, it must be temporarily replaced by the zinc-sulphur paste employed in the same manner.

In cases where a mild non-energetic, yet effective, treatment is desired, and one which will not require frequent inspection by a physician, as in patients with irritable skins who live at a distance, the "resorcin vapour covering" may be used with advantage. This covering may be worn constantly or only at night.

[†] ℞. Resorcin.	
Glycerin, āā,	10, 0.
Spiritus,	180, 0. —*M.*

Sig., Dilute four times with water or camomile tea.

A thin layer of cotton wool, wet with the diluted solution, is laid upon the skin, covered with rubber tissue and made fast by a bandage or some other means of fixation. When the eczema is not very moist the dressing can be allowed to remain on more than one day.

In universal seborrhoic eczemas, resorcin is best prescribed in substance, and must be used every evening, in the strength of 2 grms., dissolved in half a basin of warm water for children, 5 grms. for adults. A woollen undershirt is dipped in this solution and immediately drawn on by the patient. He is then put to bed and wrapped up in a woollen blanket and remains the whole night in a universal resorcin—vapour envelope.

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[*] Zuerst mittheilt—Unna, Behandlung der Lepra, 11*ter Congress der Americ. Derm. Assoc. in Baltimore*, 1 Sept., 1887.

[†] Unna, Behandlung des Ekzems mit Resorcindunstumschlägen, *Monat. für pkt. Derm.*, 1889, Bd. 9, p. 44.

This treatment by night can be supplemented by the use of the zinc-sulphur paste by day. Of the special varieties, weeping seborrhoic eczema upon the heads of children, and intertriginous seborrhoic eczema, require the use of zinc-ichthyol ointment spread upon gauze (zinkichthyalsalbenmull).

In seborrhoic rosacea, besides zinc-sulphur paste, the skin should be peeled off one or more times by the following exfoliating paste :—

R.	Zinc. oxid., ...	pts. 4.	
	Terræ siliceæ, ...	pt. 1.	
	Adip. benzoat., ...	pts. 15.	
	Resorcin, ...	pts. 20.	—*M.*

ERYSIPELAS.

Syn.—*Ignis sacer* (Latin); *St. Anthony's Fire* (English); *the Rose* (Scotch).

Erysipelas—ἐρυθρός, red, and πελλα, skin—may be defined to be a diffuse spreading inflammation of the skin, of a specific and contagious nature, which is preceded and accompanied by inflammation of the neighbouring lymphatic vessels and glands; which induces serous infiltration, with a tendency to suppuration of the subcutaneous cellular tissue; and which is accompanied by fever, usually of a low type.

From an ætiological point of view, this disease has been divided into idiopathic and traumatic. The latter is very apt to follow upon burns, operations, and wounds, particularly wounds of the scalp and lacerated wounds of the extremities. "But while the inflammation may follow the simplest wounds where every proper attention is paid to them, they become far more decided causes of it if irritated by improper applications or by friction, or if thorough cleanliness be not observed." * Strictly speaking, it is doubtful whether there is such a disease as idiopathic erysipelas, seeing that the starting point of this variety, if carefully sought for, is usually found to be some slight lesion—such as a herpetic or eczematous eruption, an excoriation, the prick of a pin, or a leech-bite—which is very apt to be overlooked; so that perhaps it would be more appropriate to speak of Medical and Surgical erysipelas, the first coming usually under the observation of the physician, the second of the surgeon.

Erysipelas is an infectious complaint, as the following illustrations demonstrate:—"In the epidemic of typhus that prevailed in the autumn of 1838, more or less of erysipelas was constantly to be found in the wards; and, as a general rule, it spread from bed to bed. On one occasion, however, this was more than usually striking. It occurred in the large fever ward, containing thirteen beds, and well ventilated. Erysipelas attacked a patient on that side on which were seven beds. She was in the bed next but one to the end; the patient lying in the next bed, the third from the end, was next attacked, and then the patient at the end. The disease successively attacked all the patients in the order in which the beds were placed, until it reached the lower end of the ward. It then attacked the patient lying at the same end of the ward, but on the opposite side, and spread from bed to bed, until it reached the last on this side, the patient lying in which was the only one who escaped." *

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* *A System of Surgery*, edited by T. Holmes, M.A., Cantab. London: Longmans, Green & Co., 1870.

"A sportsman injured his right foot with his gun. The wound, in itself serious, was rendered more so by consecutive hæmorrhage, and became complicated with erysipelas on the fifteenth day. The disease invaded the entire limb, gangrenous patches appeared, and adynamia supervened, which led to death on the twentieth day from the accident. The brother, a healthy young man, who had ministered to deceased during his fatal illness, was seized, without any local cause, with spontaneous erysipelas of the face, which extended to the hairy scalp, and became complicated with adynamic symptoms. He died on the eighth day. The sportsman's daughter, a child of three years of age, had a slight burn on the hand, which became the seat of erysipelas. The disease extended to the arm and chest, the symptoms at the same time assuming a formidable character; ultimately the extent of the disease became limited, and the child recovered. The family laundress, after washing the linen of the household, was seized with phlegmonous inflammation of the hand, from which she recovered. The sick-nurse had erysipelas of the face and head; she had no ataxic symptoms, and recovered. But this history is not yet complete! A sister of charity, who had been entrusted with the irrigation of the foot of the wounded sportsman, was forced by fatigue to discontinue her duties; she then felt pains in the right arm, which afterwards became very severe, and were accompanied by nausea, vomiting, and prostration. A large phlegmonous abscess opened in the arm, and was followed by several others in different parts of the body; there was a profuse discharge of unhealthy pus; sloughs formed; the general symptoms became more and more complicated; and at last the patient sunk under most

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* Communicated to Mr. Campbell de Morgan by Dr. Goodfellow, as having been witnessed in the Fever Hospital, London. Holmes' *System of Surgery*, vol. ii., p. 234.

excruciating pain. The religious community to which this sister belonged was in excellent health when she returned to it unwell. Upon her return, however, different adynamic maladies, of a more or less severe character, showed themselves in a form at least infectious, if not contagious. Health was restored to the community by the sisters evacuating the convent and going to the country. Prior to this, however, nine sisters who had waited upon, and dressed the abscesses of, the deceased, or who had attended upon some of their sick sisters, had severe attacks of illness, from which two of them died."*

Like many other infectious diseases, erysipelas occasionally assumes the form of a veritable epidemic, the most striking illustrations of which are seen in surgical and lying-in hospitals. When once it has gained a footing in an infirmary, it is apt to spread with great rapidity and to prove very fatal, especially if careful attention is not paid to cleanliness, ventilation, and efficient isolation of those who are attacked.

In lying-in hospitals, puerperal fever and erysipelas frequently co-exist in the same patient, or the mother may be carried off by the former, and her infant by the latter, so that the two diseases seem to be reciprocally transmissible; indeed, it is a question whether one at least of the varieties of puerperal fever is not a form of internal erysipelas.

If we except cases of erysipelas occurring in infants at a time when puerperal fever is epidemic, this disease is rarely met with in children, and seldom in its acute and typical form after the age of 40, the period of life when it is most common being from 20 up to 40 years.

Persons who are in a robust state of health, and not ailing at all, are little liable to contract the disease, but those whose systems have been upset, as by exposure to cold and wet, or owing to derangements of digestion, are more predisposed thereto. Debility in any shape or form, intemperance, disease of the kidneys, and derangements of menstruation, render the system more open to its attacks, and cases have been recorded in which it supervened periodically at the menstrual periods. Finally, some persons and some families seem to be specially liable to its attacks, owing—as we say in our ignorance—to some peculiar idiosyncrasy. But in this there is nothing unusual, for we meet with the same proneness to contract disease in the case of many other maladies.

It has long been believed that the essential cause of erysipelas is a poison of some sort, but it is only recently that this belief has been converted into a certainty by the discovery by Fehleisen of a specific pathogenic micrococcus, named the streptococcus erysipelatosus (see Fig. 13). Microscopically it cannot be distinguished from that of traumatic infective diseases, and of puerperal fever, but culturally, and in their effects upon animals, marked differences are observed.* In quite a number of cases Fehleisen has inoculated rabbits and men with pure cultivations of the streptococcus erysipelatosus, and has induced typical attacks of erysipelas. The cultivation experiments of Professor Leroy show that this microbe forms a growth in gelatine, which, after a short time, atrophies and disappears, but may subsequently reappear, possessing all its original virulence. He thinks that this may account for the recurrence and periodicity of attacks of erysipelas.† This organism, which is quite immobile, is found in chains in the lymph spaces and channels—but not in the blood-vessels—of the skin and subcutaneous tissue, and it is specially abundant in the superficial layers of the corium. It is most plentiful at the spreading edge of the disease, and, along the course of the lymph vessels, there is a variable amount of small celled infiltration.

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* "Trousseau's Lectures on Clinical Medicine," vol. ii., p. 261. London. *New Sydenham Society's translation*, 1869.

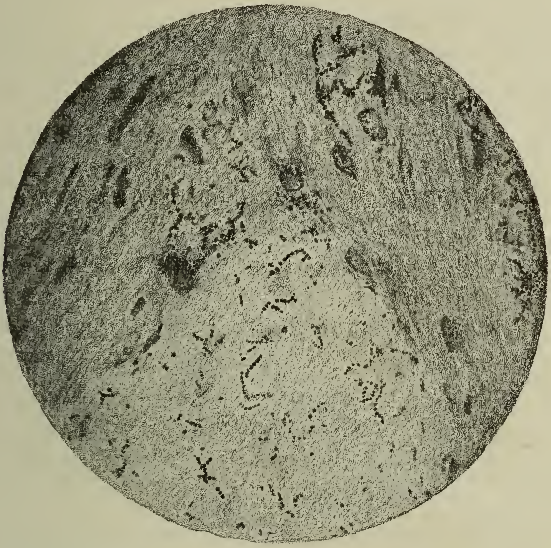

Fig. 13.—Streptococcus erysipelatosus—from *Atlas der Bakterienkunde*, by Fraenkel and Pfeiffer.

Another division of erysipelas—from the point of view of its symptomatology—is into erysipelas simplex and phlegmonodes. The latter differs from the former principally in degree, the inflammation being more severe, attacking the subcutaneous tissue and the fasciæ as well as the skin, and generally ending in suppuration.

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* "A brief review of our knowledge of the relation of micro-organisms to diseases in man," by Wm. Robert Smith, M.D. *Trans. of Epidemiological Society of London*, N.S., vol. viii.

† *Comptes rendue de la Société de Biologie*, 6th December, 1889.

Erysipelas simplex.—In this form, which generally attacks the face, the eruption is preceded, for a few hours or even two or three days, by the usual symptoms of fever, upon which it is unnecessary to dwell; the febrile movement is often slight at first, but has a tendency to increase in intensity when the skin affection is fully developed, and in the more severe cases the urine, besides being scanty and high coloured, and throwing down lithates on cooling, often contains albumen, though usually not to any extent, unless there is coexisting kidney disease. There is also increased excretion of urea, while the chlorides are diminished.

As the disease advances, the fever is apt to assume a low or typhoid type, and, in erysipelas of the head, epistaxis is not uncommon. From what has been said, it is evident that there is nothing special in the febrile symptoms, which would lead one to suspect the onset of erysipelas, but an examination of the neighbouring lymphatic vessels and glands (*e.g.*, of the neck, in the case of erysipelas of the face) will show that they are inflamed, tender, and painful; and when this occurs without any neighbouring inflammation (such as sore throat, in the case of the neck glands), there can be little doubt that erysipelas is impending, so that the constitutional reaction prior to the development of the cutaneous inflammation is in reality symptomatic of the lymphatic inflammation.

The cutaneous inflammation usually has its starting point at some lesion, though it is often so slight as to be altogether overlooked, but over and above this there seems to be a tendency for it to commence close to one of the orifices of the body, such as the angles of the mouth, the orifices of the nostrils, the edges of the eyelids, the meatuses of the ears, or the anus—*i.e.*, where skin and mucous membrane meet. Let us suppose that the face is attacked: a spot of redness first makes its appearance, thence it rapidly spreads over the face, and often involves the head, while sometimes it spreads down the neck or even further. In a case related by La Motte, the inflammation spread from the head downwards over the whole body, not even the fingers and toes escaping, and, as new surfaces became involved, the eruption gradually faded from the parts earlier attacked. To this variety, which, however, is rarely so universally diffused, the term *erysipelas ambulans* has been given. It will thus be seen that one of the most striking characters of the erysipelatous inflammation is its tendency to spread rapidly, while *post-mortem* examinations show that this creeping character is due to the absence of lymph, such as in ordinary phlegmon circumscribes the inflammation. The redness, which disappears on pressure throughout, is generally of a rosy-red tint at the outset (hence the origin of the term "the Rose"), but in the later stages it becomes dusky, or, in bad cases, even livid. The surface is usually smooth and shining; at all events the punctated appearance so characteristic of eczema is never observed. More or less swelling of the affected parts is invariably present; sometimes it is moderate, but, where there is much loose cellular tissue, it is generally considerable, particularly on the face, where the eyelids, nose, lips, ears, &c., may be so enormously tumefied, that the features are altogether unrecognisable. The swelling, which renders the parts harder to the touch than natural, is due mainly to the infiltration of the subcutaneous cellular tissue with serum, and may be so great as to give rise to marked pitting upon pressure (E. œdematosum). The œdema is most frequently observed when the lower extremities are attacked, and when the complaint occurs in broken-down constitutions: in such cases, the rosy tint of the eruption is rarely observed, and the parts are apt to be livid and may become gangrenous.

When the inflammatory action runs high, the serum accumulates, not only in the subcutaneous cellular tissue, but also between the epidermis and cutis vera, giving rise to the formation of vesicles and bullæ (E. miliare, E. phlyctenodes). The vesicles and bullæ generally contain clear serum, which gradually becomes opaque from admixture with epithelial cells and a few pus corpuscles, but in bad constitutions it may become sanguinolent: these dry up into crusts which, for a time, increase the disfigurement. In the acute stage of the inflammation, and while it is spreading, the redness does not shade off gradually into the healthy skin, but is abrupt, and on passing the hand over the surface distinct elevation is detected at the edge—as the eruption declines, however, the elevation and abruptness of the edge are no longer observed. In the acute stage, the parts feel tense, burning heat and pain may be complained of, and they are tender to touch, while the elevation of temperature is perceptible to the hand as well as to the thermometer.

Sometimes the inflammation attacks the mucous membrane of the throat and larynx without implicating the skin—thus resembling cases of scarlatina with sore throat but without eruption—or the disease may commence in the throat, and afterwards spread through the nostrils to the face, but generally the throat is affected secondarily to the face. When the throat alone is affected, we may suspect its erysipelatous nature from the fact that the throat is less swelled, though more painful, and the redness less vivid than in simple angina. Fever, too, is more severe as a rule, and the neighbouring glands more swollen, and there may be a history of infection. In a case recorded by Mr. Arnott in the *Medical and Physical Journal* (March, 1857), ulceration and sloughing occurred at the back of the larynx and proved fatal. In this case there was no external erysipelas, but the fact of two other members of the family being simultaneously attacked by sore throat and severe external erysipelas left little room for doubt that this was a case of erysipelas limited to the mucous membrane.

In the advanced stages, delirium and other head symptoms are frequently observed, which are generally the result of the intensity of the fever, rather than of erysipelas of the brain. If such a complication ever occurs, it can only be in connection with erysipelas of the orbit, or where the disease follows upon a compound fracture of the skull. Death, however, may result from congestion of, or effusion into, the brain, arising "from the pressure made by the swollen tissues of the face and neck on the veins returning blood from the head, the membranes being already in a partially congested state from the febrile condition attending the disease." *

Sometimes the erysipelatous inflammation, instead of creeping along the skin, leaves the part first attacked, and breaks out successively in other and often distant localities, especially when the trunk of the body is the seat of the disease (E. erraticum). In this form the local phenomena are usually comparatively trifling, but it is a serious condition, seeing that it most frequently occurs in broken-down constitutions, and by its long continuance it may wear out the patient.

In favourable cases the symptoms of erysipelas generally begin to disappear within a week or ten days at furthest, the vesicles and bullæ dry up, the redness fades, and desquamation occurs, at which time the burning heat usually gives place to some degree of itching, and all trace of the disease is generally gone within three weeks, or often sooner.

Erysipelas is frequently a much milder affection than might be inferred from the above description, indeed it is met with of every grade of severity.

Erysipelas phlegmonodes.—In this variety the local and, *cæteris paribus*, the constitutional symptoms are more severe than in that first described; the inflammatory action runs higher, attacks the subcutaneous cellular tissue as well as the skin, and, in many cases, the fasciæ and intermuscular septa, and even the tendons. While, therefore, the local phenomena are similar to those of E. simplex, they occur in a more exaggerated form, the parts feeling harder, the redness being more dusky, and the pain often great. By degrees the hardness gives place to a boggy sensation, at which time a rigor may occur indicating the supervention of suppuration. The fluctuation is at first obscure, but it is important to recognise it as early as possible, for, if exit is not given to the pus, it is apt to burrow and to induce extensive gangrene of the subcutaneous cellular tissue and fasciæ, and also often of the skin, especially when the extremities are implicated. In exceptional cases the periosteum is destroyed leading to necrosis, and even the joints in the vicinity may be opened and disorganised. The starting point of this variety of erysipelas is usually an unmistakable wound or injury, and its favourite seats are the extremities, and next to this the head, although any part may be involved. When the scalp is implicated in the inflammation, the hair subsequently falls out, owing to the hair follicles having "been the seat of an exudation which loosens the hair and detaches it from its matrix" (Niemeyer), but this alopecia is only temporary.

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* *A System of Surgery*, edited by T. Holmes, M.A., Cantab. London: Longmans, Green & Co., 1870. Vol i., p. 231.

Erysipelas may be mistaken for erythema, phlegmonous inflammation of the skin, and diffuse cellulitis.

Erythema is a very much milder affection, is usually unaccompanied by fever, and the local symptoms (heat, redness, swelling, &c.) are very moderate. Although burning heat may be complained of, there is no pain, vesication is absent, and œdema—if it occurs—is usually trifling, unless the eruption occurs as a complication of, and in consequence of, dropsical effusion. The affection, too, does not spread with an elevated abrupt edge, it has not the same tendency to creep along the surface, and suppuration is never observed, unless the disease passes into the pustular form of eczema, in which case the pus is quite superficial and raises up the epidermis in the shape of pustules. Finally, this eruption is not in the least degree infectious, nor does it ever occur in the epidemic form.

Phlegmonous inflammation of the skin cannot long be mistaken for erysipelas, if it be borne in mind that the inflammation is circumscribed by lymph, and therefore does not creep along the surface, and that it is neither contagious nor epidemic.

Diffuse cellulitis cannot be mistaken for erysipelas at the outset, for it begins in the subcutaneous cellular tissue, the skin being at first unaffected, and sometimes remaining so throughout, whereas in erysipelas the skin is affected prior to the cellular tissue, and, when the latter is attacked, the former is proportionally involved. Further, the secondary inflammation of the skin in cellulitis is wanting in the creeping character above described, and the edge is neither abrupt nor elevated. Diffuse cellulitis is, almost invariably, manifestly traumatic in origin, and it generally ends in diffuse suppuration and death of the cellular tissue, whereas the majority of cases of erysipelas terminate in resolution.

Prognosis.—This disease must never be made light of, although the so-called idiopathic form, such as affects the face and head, almost always terminates in recovery, unless in aged and broken-down subjects, or in those who are intemperate, or the subjects of dropsy, or chronic kidney disease, or when the fever runs very high and is not controlled by anti-pyretic remedies. E. erraticum is, *cæteris paribus,* a more serious affection, because it generally occurs in broken-down subjects, and from its longer duration is apt to exhaust the patient. Surgical, too, oftener proves fatal than medical erysipelas, which, according to Trousseau, "probably depends upon recently denuded vessels becoming the seat of violent inflammation and producing much greater disturbance of the economy than results from erysipelas determined by a small and partially cicatrised excoriation, or a herpetic ulceration."*

As can be readily understood E. phlegmonodes is a more serious affection than E. simplex, and epidemic than sporadic erysipelas, and, when the disease is epidemic, its type, whether mild or malignant, must be taken into account in estimating the prognosis. But of all varieties that which invades the lying-in room is the most dangerous, and erysipelas in a new-born infant, and in a woman in the puerperal state is generally fatal.

Treatment.—*A. Constitutional.*—Until comparatively recent times the old-fashioned antiphlogistic treatment of inflammation was employed also in cases of erysipelas; but there are few nowadays who will not agree, with Reynolds, that, as "the class of cases, which have been described in such manner as to justify the use of antiphlogistic treatment, does not exist except in the histories of the past and the imaginations of the present," it is "unnecessary to say how much blood should be taken from the arm of a man provided that he is found in a condition that we never meet with." † At the outset, however, if there is digestive or biliary derangement, a few grains of calomel, followed by a seidlitz powder, may be given with advantage, the bowels being thereafter regulated, if necessary, with the simplest and mildest aperients.

In most cases tonics are to be recommended—and quinine in full doses is often of use—although I cannot endorse the extravagant encomiums which, by most authorities, have been passed upon iron; nor can I find any proof of the opinion, expressed by Velpeau, that in erysipelas it alters the quality of the blood, or by the late Dr. G. Hamilton Bell, of Edinburgh, that it has a controlling power over the tonicity of the capillaries. I am, therefore, more inclined to side with Trousseau, who trusted mainly to feeding, and supporting the strength of his patients, just as we would do in the case of one of the specific fevers, while attending to any complication which may arise. As it is quite certain that hyperpyrexia is frequently the cause of death in the fatal cases, it follows that, if there is high fever, with delirium, energetic antipyretic treatment is urgently required, such as antipyrine in doses of 15 to 30, or quinine in doses of 10 to 30 grains given once in the 24 hours, and the external application of cold in the shape of Leiter's temperature regulators, while in very urgent cases the cold bath may be employed. (For further particulars, see the treatment of the eruptive fevers.) In many instances sedatives and narcotics are indicated, especially if the patient is restless or sleepless.

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* "Lectures on Clinical Medicine," by A. Trousseau. London. *New Sydenham Society's translation*, 1869, vol. ii., p. 256.

† *A System of Medicine*, edited by J. Russell Reynolds, M.D., &c. Vol. i., p. 689. London: Macmillan & Co., 1866.

As this is an infectious disease, it is obvious that attention to absolute cleanliness and free ventilation is of the first importance, while the usual disinfectants should be employed, just as in the case of the specific fevers. In hospitals, such measures are even more important than in private practice, and those who are affected should, if possible, be isolated; indeed, in some hospitals a detached building is provided for those who are suffering from it. And, if many persons in one ward are attacked, all the patients should be removed, and the apartment should be thoroughly disinfected and ventilated before being again used.

B. Local Treatment.—When the extremities are the seat of the disease they should be kept in an elevated position—the arms, for example, being put in a sling, and the leg elevated on a pillow. This gives the patient great relief by allowing a more free return of blood from the affected part.

As regards local applications there is great difference of opinion: the plan which seems most generally adopted is simply to envelope the part in cotton wool, after having dusted it with some dusting powder, such as flour, powdered starch, or violet powder. The addition of a little powdered camphor has often a cooling effect, as in the following formula:—

℞ Pulv. zinci oxidi,
Pulv. amyli,
Pulv. lycopodii, āā, . . . ℥ss.
Pulv. camphoræ, ... ʒss.
Olei rosæ, ... ♏i. —*M.*

If bullæ form and give rise to uneasiness and a feeling of tension, they may be punctured and their contents allowed to escape, but the cuticle forming the roof of the bulla should be allowed to dry up *in situ*, so as not to leave an abraded surface.

A remedy which has been much used is nitrate of silver, but the plan of encircling the eruption by means of a line traced on the neighbouring sound skin with solid caustic is a very worthless proceeding. It is far otherwise, however, with the method of application suggested by Mr. Higginbotham, of Nottingham. The part is first washed with soap and water in order to remove any oiliness of the skin which may be present; then with plain warm water to remove the soap which might decompose the caustic, and dried. The whole of the affected surface, and the sound skin for about an inch beyond the edge of the eruption, is thoroughly painted with a strong solution of nitrate of silver (℈i to ℥i of water). Twelve hours thereafter it will be seen by the colour of the skin whether any part has escaped, and, if so, the solution must there be reapplied. If there is any vesication, the blisters may be punctured, and the raw surface gently touched with the caustic, unless the vesication results, not from the disease, but from the use of the solution, in which case it may be let alone. Should the eruption extend beyond the part which has been cauterised, the newly-affected part, and a little beyond it must at once be treated with the solution.

When the head is affected, it may be too sensitive to bear the use of the razor, in which case the hair may be cut short with scissors, but shaving is preferable, so that, if the inflammation is on the face and spreading towards the head, the razor should be used at once. The advantage of removing the hair is that it admits of the free application of the caustic (and the scalp is so thick that it may there be applied with great freedom), and permits us to see the whole extent of the inflammation; otherwise its extent can only be made out by the presence of tenderness and pitting upon pressure. It is always better to prepare the solution of caustic immediately before it is to be used, or at all events it should be kept in a coloured bottle, so as to exclude the light.

Another local application which is highly recommended by many is collodion. Some regard it merely in the light of a palliative, while others hold that it actually cuts short the disease. It certainly forms a covering for, and protection to, the inflamed skin, and by its pressure gives support to the congested capillaries. Mr. Burman* recommends the painting of the affected parts and their edges with 1 part of iodoform mixed with 10 of collodion. Unna is in favour of a mixture of 1 part each of ichthyol and sulphuric ether, and 2 parts of collodion, while, in Russia, a favourite remedy is equal parts of ichthyol and vaseline. It is said to give relief in a few hours, and to arrest the further progress of the disease.

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* *Practitioner*, May, 1884, p. 365.

Dr. F. Nesterovsky* advises the painting of the affected surface, and half an inch of the adjoining healthy skin, every second day, with equal parts of extract of secale cornutum and glycerine. In the intervals a thin layer of a 5 per cent. carbolised cotton wool is applied. Dr. Trapeznikoff, of Dinaburg, paints the parts every half hour or hour with ʒi of carbolic acid dissolved in ℥iij of oil of turpentine, while Dr. Behrend, of Sagan—acting on the fact that absolute alcohol is poisonous to the erysipelas cocci—sponges the surface and the vicinity thrice daily with 90 per cent. absolute alcohol, and finds that it arrests the disease at once.

Trousseau was in favour of the application of a solution of camphor and tannin in ether; Velpeau, of a lotion of sulphate of iron (ʒi to Oi), or of an ointment containing camphor (ʒi to lard ℥i), or sulphate of iron (℈i to ℥i), the parts being afterwards enveloped in cotton-wool. Dr. Hastreiter, in the Vienna medical press, recommended the painting of the affected surface with oil of turpentine, while Lücke prefers to rub it in, and Dr. Flaminio Tassi has found good results from painting the part night and morning with a saturated solution of picric acid in water. But the local application, which probably has most advocates at the present time, is tincture of iodine, which may be freely applied to the affected surface and its edges. In the *Lancet* of March 10, 1883, Mr. Richard Barwell recommends the painting of the part with white-lead paint, such as can be purchased at any oil and colour shop, giving it one good coating. He has published some very striking cases showing that it almost at once puts a stop to the disease, and he believes that it acts simply by excluding the air. Instead of white-lead paint, Wilson's "Linimentum Plumbi Lactatis C.," which is prepared by Messrs. Jacks & Co., Gower Street, London, may be employed.

If suppuration is threatening, early and free incision is indispensable, for, if we delay till suppuration is fully established, rapid and sometimes deep extension of the suppurative process and sloughing of the cellular tissue are apt to ensue. If suffocation is threatened owing to the occurrence of œdema of the glottis, and this is not relieved by free scarification of the œdematous part, there is nothing for it but opening the larynx or trachea.

URTICARIA (*Urtica—a Nettle*).

Syn.—*Nettlerash—Urticaire—Nesselausschlag.*

The **symptoms** of this disorder are very familiar to most persons, seeing that the rash is identical with that resulting from the sting of

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* *Novosti Terapii*, November, 1888, p. 420.

the common nettle (urtica urens); hence the term nettlerash. It makes its appearance in the shape of circumscribed elevations, rarely larger than the finger-nail, which are rounded or oval, or which assume the form of segments of circles (pomphi or wheals); and, when the patches are present in their most typical form, the centre of each is pale, while the periphery is red. This eruption is accompanied by itching, burning, or stinging sensations, which are increased by scratching, and are often very distressing; but its most remarkable character—that by means of which it can be distinguished from most other eruptions, and which often enables us to say that a rash is a member of the nettlerash group, although it does not assume the typical characters of that disease—is the wonderful rapidity with which it appears, and its transient character; for, in a few minutes it may be fully developed over the greater portion of the body, and within an hour it may all have vanished, although sometimes two or three days elapse before it disappears: it is never followed by desquamation. Its tendency to resolution is indicated by the wheals feeling softer, by the fading of the peripheral redness, and by the subsidence of the irritation. Occasionally, vesicles or bullæ make their appearance upon the patches, if the inflammatory action runs high, so that the careless observer might mistake the eruption for herpes or pemphigus. And not unfrequently the rash is accompanied by œdema, especially where there is much loose cellular tissue; or œdema may take the place of the eruption—oftenest on the hands and face (Urticaria œdematosa). The extent of the rash is very varied: sometimes it is partial, being limited to the hands or face, while at other times the whole surface is more or less involved. Sometimes the patches are distinct from one another, sometimes they are confluent (U. conferta). It presents, too, certain peculiarities, according to the region affected. "When it occurs on the face, it generally produces an œdematous swelling, especially of the eyelids and lips; the wheals, however, are less distinct than usual, and the rash for the most part assumes the character of an urticaria rubra, and consists of red lines and striæ. The neck is comparatively rarely the seat of this eruption, which is, however, more commonly seen on the chest and back, where, as on the face, it often takes the form of striæ, and sometimes of peculiar wavy lines. On the limbs, it is observed less frequently than on the trunk. When nettlerash affects the neighbourhood of a joint, the skin over the articulation becomes swollen and œdematous. If the hands and feet are attacked by it, the patient often complains merely that they feel as if covered by some woollen substance . . . and no particular change in the appearance of the skin of these parts is to be detected. In some cases, however, the fingers and toes become so swollen, that their movements are interfered with." *

The rapidity with which nettlerash comes out and its evanescence have led to much speculation as to its cause. There are some who hold that spasm of the muscular fibres of the skin leads to the development of pomphi; while Liveing is of opinion that they are the result of a spasmodic contraction of the muscular coat of the vessels. The most generally received opinion, however, is that they are due to an acute inflammatory œdema, having its seat in the papillary layer of the corium, and the reason why the rash is so fleeting is, apparently, that the exudation is thinner and more serous than in the case of most other inflammatory affections, and that the vessels soon recover their tonicity, and absorb the exudation.

Urticaria is usually an acute affection which disappears in a few hours (U. ephemera), or at most within a very few days (U. evanida), and sometimes it is preceded and accompanied by fever (U. febrilis). The presence of febrile disturbance is rather a favourable feature than otherwise, for then there is a reasonable hope that the attack is an isolated one, and will be of short duration, disappearing with the transient cause which has produced it.

It may seem strange to speak of chronic urticaria, seeing that the grand characteristic of the rash is its evanescence; but what is meant is that, although each individual rash is of short duration, the disease is kept up by constant relapses, and thus may continue even for years (U. perstans; Nesselsucht; Urticatio). In this form, errors of diagnosis are apt to arise, for the eruption is, in the majority of cases, nearly or completely absent when the patient presents himself for examination, and then all that we can see upon the skin is the eruption produced by the nails of the patient in scratching (elsewhere designated a pruriginoid eruption); but an inquiry into the history of the case will prevent errors, and generally we are told that the eruption comes out when the patient is undressing at night or after he gets warm in bed, or under the influence of nervous excitement. In these cases, too, we may be helped in our diagnosis by writing letters upon the skin with a pencil, which is generally followed almost immediately by a nettlerash tracing (Factitious nettlerash).

There is a variety of nettlerash to which the term *U. nodosa seu tuberosa* has been given. It is a rare affection; it appears in the shape of pretty hard nodosities about the size of a split marble, and of a reddish colour, which involve the skin and subcutaneous cellular tissue, and which occur oftenest at night, and disappear in a few hours, frequently recurring. They may involve any part of the body, but the extremities and loins are specially liable to attack. In very rare cases, owing to excessive congestion of the nodosities, rupture of the capillary blood-vessels ensues, so that, after their subsidence, round ecchymoses are left, which gradually disappear. Generally, the nodosities are multiple; but, occasionally, only a single one makes its appearance. A case of this kind came under my observation some time ago. A gentleman, about fifty years of age, and otherwise apparently in good health, came to show me a swelling upon the left side of the neck, just below the ear. When I saw it, it was beginning to subside, but it was still three inches in diameter, and raised about an inch and a-half above the level of the surface. He told me that he had been subject to this for ten years, the swelling coming on about once in two months, or oftener in damp weather. From its commencement to the time of its attaining its full size, no more than five minutes ever elapsed, and sometimes its growth was so rapid that its increase in size could actually be seen. As it grew larger, it became hard, and was the seat of a slight tickling sensation, and, when very large, it interfered with mastication. It always disappeared within a few hours, generally within two or three. It never developed upon any other part of the body, and no neighbouring irritation—caries of teeth, &c.—or other cause was apparent.

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* "On Diseases of the Skin," by Ferdinand Hebra, M.D. *New Sydenham Society's translation*, vol. i., p. 304.

In rare cases urticaria is accompanied by hæmorrhage—which may be very profuse—from the stomach, bowels, or urinary passages, probably owing to the mucous membranes being attacked by the eruption and rupture of capillary vessels ensuing. An interesting case of this kind is recorded by Dr. Pringle in the 18th vol. of the Clinical Society's *Transactions.*

Only one other variety of urticaria is worthy of mention, and it is less fleeting than those previously alluded to. In it, the inflammatory exudation occurs around the cutaneous follicles, and is accompanied by the deposit of lymph, leading to the formation of large red papules, the centres of which are often pale. These are exceedingly itchy; and, as the patient does not spare himself, the summits of many of the papules are torn off by the nails, and the blood which exudes dries up into little blackish crusts, thus somewhat resembling prurigo. Mingled with the papules are generally found some of the typical nettlerash wheals. This is the variety of urticaria almost exclusively met with in young children; it is most commonly seen upon the hips and extremities, and often lasts for months. It corresponds with the *lichen urticatus* of Willan, and, according to Colcott Fox, with Hutchinson's varicella prurigo, and the infantile prurigo of other English writers.

Ætiology.—This is one of the few diseases of the skin to which the term neurotic may, not inappropriately, be applied, seeing that the vaso-motor nerves are principally at fault. This vaso-motor nerve disturbance may result from direct irritation of the skin, or may be reflex, arising from the irritation of distant organs and tissues; but, whatever the cause may be, the first consequence is contraction, which is succeeded by dilatation and paralysis of the capillary vessels of the affected parts.

The most familiar illustration of local irritation, resulting in nettlerash, is to be found in the effect of the sting of the common nettle (*Urtica urens* or *dioica*), the sting resulting from the irritation of the fluid in the glands on the under surface of the leaves connected with the prickly hairs, which contains sulpho-cyanogen. Dr. Naismith, of Ayr, tells me that in Upper Bengal, where he spent the first ten years of his life, the use of the meal of split lentils (called there "basun" or "basin") was a very common substitute for soap, and that, whenever it was applied to his skin, a violent outbreak of nettlerash resulted. For a few years after coming to this country, too, he never could take a plate of pea soup without having, within twelve hours thereafter, an attack of herpes labialis, an allied neurotic affection. It is also often called forth, in those who are predisposed, by scratching the skin, or by the bite or sting of insects, such as the flea, the bug, the mosquito, and the wasp; in which case, in the centre of each wheal, the seat of puncture, in the shape of a dark point, is to be seen (Urticaria traumatica). Some years ago, I received a telegram asking me to visit immediately a well-known gentleman in the West of Scotland, under the following circumstances: —While picking strawberries in his garden, he put one into his mouth containing a live wasp, which stung him on the right side of the tongue near its root. In about five minutes, his tongue was so much swollen that he could scarcely move it; and within ten minutes the whole surface was covered with nettlerash, which, commencing on the head and neck, rapidly spread over the whole body. The affected parts were of a deep red colour, were very much swollen, and intensely itchy. The first medicine at hand was citrate of magnesia, of which he had half an ounce; and about an hour afterwards he vomited, putting up with the vomited matter some strawberries and gooseberries of which he had partaken. When he was sick, the itching almost disappeared, but returned again afterwards, though not with the same severity. Three mild antibilious pills were then administered, which acted in about two hours; and within four hours from the commencement of the nettlerash, it had entirely disappeared. Lately, I saw, in consultation with Dr. Miller, of Dundee, a single lady who had been troubled with nettlerash for eighteen months, in whose case the washing of the face with warm water brings it out at once, so much so, that for half an hour thereafter she is unable to go down to breakfast on account of the disfigurement.

Amongst other internal causes, which may produce nettlerash by reflex action, may be mentioned the following:—

a. Irritation of the uterine nerves in connection with uterine disorders of various kinds. Hebra mentions the case of a patient who had flexion of the uterus, and in whom nettlerash was induced fifteen times in succession as the result of the introduction of the uterine sound; and cases have been recorded in which the rash appeared in connection with each pregnancy.

b. In some persons, mental emotion is sufficient to call it forth, such as an excess of joy or grief; and, once it has appeared, it is very apt to return from the slightest causes, and even from speaking of it. Some remarkable cases of this kind have been reported by Alibert. He once saw a young woman, who could not enter a drawing-room without having the whole skin covered with nettlerash, so much so that she could not dance or enjoy any other recreation; an ecclesiastic, who could not celebrate divine service because the eruption immediately came out, and caused him to scratch himself with the greatest violence; and a poor woman, who for sixteen years was the victim of this complaint, and who could not speak without the whole body being covered with the rash.

c. Derangements of the digestive organs are very apt to produce it, or partaking of certain articles of food, or even food to which patients are unaccustomed (Dr. Thomson). The kind of food, which produces it, varies in different persons, but they soon get to know what they cannot take with impunity. Shell-fish, such as mussels, oysters, crabs, and lobsters; fruits, such as nuts and almonds; vegetables, such as onions and garlic—especially if underdone; meat, such as pork and sausages; and medicines, such as valerian, copaiba, cubebs turpentine, and quinine, are, perhaps, most apt to induce it. In a letter which I received some time ago from a medical friend on the subject of nettlerash, he mentions the following substances as being apt to disagree with him:—"*In primis*, nuts of all kinds; haws from the hawthorn, especially if very ripe; raisins, figs, prunes, and dried fruit of all kinds, especially if containing sugar. Dates do so very rapidly; sometimes grapes, if I eat the skins. Almonds, wheat, new oats, peas (green and dried); beans of all kinds, unless cooked; most pastries, if they contain a good deal of oil, and are what are called heavy or rich; infusion of senna; and common tea, if strong, and without cream and sugar. Neither coffee nor chocolate injures me, but cocoa does; and common scones and rolls, if the loose flour be left on them, especially if they be taken hot, and spread with butter. Opium and Dover's powder sometimes produce a like effect. The attack begins in this wise. One day, at a dinner-party, I thoughtlessly began to eat a few nuts, when, almost instantly, even when they were on the tongue, I began to feel a tingling sensation, with heat, and a sense of fulness in the throat, and swelling of the fauces. In a few minutes itching and tingling began in the palms of my hands and soles of my feet, and within twenty minutes the whole body was covered with rash, as if I had been thrashed all over with nettles. . . . My usual remedy is brandy or whisky; indeed, I can eat most of the above-mentioned articles if I am drinking whisky-toddy at the time."

The following case is also worthy of being put upon record. I quote from a letter of a relative of my own. "My experience of nettlerash is anything but recent, as it is now nearly thirty years since I discovered that I could not eat butcher's meat in any form without causing it, upon which I finally gave up the indulgence of that taste. Since then, I have once or twice had slight attacks of nettlerash from partaking of very strong soup, but none of those violent symptoms which the solid meat used to occasion. I first made the discovery after a long fever I had in 1830–31. I had previously suffered occasionally from nettlerash, but not violently, nor uniformly, on eating meat. After my fever, however, it was a clear case. It was not long before I found that everything in the shape of butcher's meat was inadmissible. Many trials were made with meats, and portions apparently as tender as, or more so than, fowl, as, for instance, rabbits, ox or sheep's tongue, sweetbreads, &c.; but all with the same inflexible result, and that whether or not I knew what I was eating, or expected to suffer from it, which satisfied me, and the most incredulous around me, that imagination had nothing to do with it. The symptoms did not begin for an hour or two. The first was the feeling of a lump over my stomach, preceptible even to the touch; then appeared nettlerash on my wrists, my arms, my groins, and other tender parts of the skin; at first, in separate white blisters (as if an army of fleas and bugs had attacked me), which shortly agglomerated into large masses of white blisters. Along with this the inside of my throat and nose became swelled, and my voice hoarse, and a feeling as if I had a violent stuffy cold in the head ensued. If the attack were less severe, I used to go to bed, and was well by morning. If more violent, I used to take magnesia, which acted strongly on my bowels, causing first faintishness, and then severe purging, after which I became well. Various members of my wife's" (she was a blood-relation of his own) "family have been subject to nettlerash, but not from the same cause. My mother-in-law could not eat barley-meal, nor my brother-in-law oatmeal, without suffering from it, though not, I believe, so severely as myself. My wife cannot let figs or wall-flowers touch her face without producing a rash. . . . If you will make it worth my while, I will come down at the Whitsuntide holidays and be exhibited. I will also eat the ornithorhynchus paradoxus, if you can catch one unstuffed, and finally determine whether it be bird or beast."

This case illustrates the occasional hereditary nature of the disease—a point which has also been brought out by other writers; amongst others, by Trousseau, in his work on "Clinical Medicine," *New Sydenham Society's translation*, vol. ii., p. 285.

In many cases, specially in chronic urticaria, no cause can be made out, and the reason may be that the cause which originally produced the attacks has passed off, and the disease has been kept up owing, so to speak, to the skin having contracted a bad habit; or it may be the result of some peculiar idiosyncrasy, which is a convenient term to hide our ignorance.

Diagnosis.—When the eruption appears in its typical form—in the shape of wheals, which are pale in the centre and red at the edges—it cannot be mistaken for any other; and, when it is due to the sting of an insect, the dark point in the centre of each wheal is characteristic; but, when it assumes one of the less usual forms, the lesion being erythematous or papular (*Lichen urticatus*) or tubercular (*U. nodosa*), mistakes may sometimes arise, if due care be not taken. Such errors may, however, be generally avoided by noting the absence of any history of contagion, and the presence of the four following points, which almost invariably characterise the members of the urticaria group—1, the rapidity with which the eruption makes its appearance; 2, the itching, burning, or stinging sensation to which it gives rise; 3, its short duration, although the disease may be kept up indefinitely, owing to the occurrence of successive crops; 4, its not being followed by desquamation.

Treatment.—The first point in the management of urticaria is to endeavour to find out, and, if possible, to remove the causes, the nature of which have already been sufficiently considered in a former section.

In acute cases, the eruption generally subsides within two or three days, when no treatment is adopted; but generally a sharp purge is of use, especially when, as in the majority of instances, the eating of some indigestible food, or digestive derangement, is at the root of the mischief; and, if we have reason to believe that such food is still in the stomach, as indicated by nausea, &c., an emetic of mustard, ipecacuanha, or sulphate of zinc, may be administered at the outset. In all such cases, stimulating food and drink should be avoided, and the diet should be of the simplest kind.

In chronic cases, a similar line of treatment should be pursued under similar circumstances, and, where we have reason to suspect that it results from the digestion being disturbed by some particular kind of food, the nature of which varies in different persons, owing to their peculiar idiosyncrasy, we may with advantage follow the advice of Willan, who wrote, "I have desired several persons, affected with chronic urticaria, to omit first one and then another article of food or drink, and have thus been frequently able to trace the cause of the symptoms. This appeared to be different in different persons. In some it was malt liquor, in others, spirit, or spirit and water; in some, white wine—in others, vinegar; in some, fruit—in others sugar; in some, fish—in others, unprepared vegetables." * Like most other observers, however, he found that, in some cases, a complete alteration of the diet was not of the least avail. It would be quite out of place to refer to the means to be taken for the removal of the many other causes of this affection, as these must be treated upon general principles, and in the same way as we should do if they were independent of urticaria.

When no cause can be made out, or where the supposed cause has been removed, and the eruption continues to crop up, we must treat it empirically. We may, for example, try the effect, as Trousseau suggested, of the administration of sulphuric ether in doses of 20 to 40 drops in water, or of quinine in full doses, or of arsenic, which is only exceptionally useful. But the medicines from which, perhaps, most is to be expected are atropia and antipyrin; the former may be administered subcutaneously at night, or night and morning, the initial dose for an adult being $\frac{1}{100}$ of a grain (*e.g.*, 5 minims of a solution of 1 grain of sulphate of atropia in 500 of water); the latter in doses of 10 to 15 grains dissolved in water three times a day. In either case the dose should be gradually increased, *either until the disease begins to yield, or until the supervention of the usual physiological effects* renders it unsafe to push the treatment further.

Excellent results are also often obtained from the continuous current of electricity for ten minutes night and morning, one sponge (the positive pole) being applied to the top, and the other to the bottom of the spine.

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* *A Practical Synopsis of Cutaneous Diseases, According to the Arrangement of Dr. Willan*, by Thomas Bateman, M.D., F.L.S. Seventh edition, edited by A. T. Thomson, M.D., F.L.S. London: Longmans. 1829.

On 22nd February, 1887, a lady, 71 years of age, consulted me on account of an attack of urticaria perstans of three weeks' duration. She had had two previous ones thirteen and six years before, each of which lasted for a good many months. The eruption came out principally, though not exclusively, after going to bed, and she attributed this last attack to fatigue and anxiety in connection with the illness of her son.

She was first treated by careful attention to diet and regimen, combined with liquor pepticus, and latterly with dilute hydrochloric acid; then she had bromides, pushed to the extent of making her drowsy, followed by sulphate of atropia pills (of gr. $\frac{1}{70}$), gradually increased from one to three daily, but all to no purpose. Accordingly on 26th March I recommended the use of 10 cells of a Leclanché battery in the manner above mentioned.

When I next saw her, on April 2nd, she informed me that she was "greatly improved," and that, if an outbreak threatened, she could control it by the use of the battery. On April 20th, when I last saw her, she was well, but was recommended not to give up the treatment for some little time.

In obstinate cases, a complete change of air and scene and occupation is desirable, and sometimes advantage is obtained from visiting one of the alkaline spas, as Vichy, or from a course, for three or four weeks, of the baths of Leuk, in Switzerland.

Local treatment is generally resorted to, more with the view of alleviating the distress of the patient, than in the hope that it will cut short the disease. The parts, for example, may be sponged with vinegar and water, or with eau de Cologne, or with a lotion of carbolic acid (ʒij in ℥vi). An ointment containing chloroform or a mixture of chloral and camphor* may sometimes be of service, and in exceptional cases not only temporary relief, but permanent benefit may result from the use of the tarry preparations, such as a lotion composed of equal parts of tar, soft soap, and rectified spirit.

URTICARIA PIGMENTOSA.

This interesting affection was first described by Mr. Nettleship, and some years afterwards by the late Dr. Tilbury Fox, who proposed

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* ℞ Chloralis hydratis, camphoræ, āā, .	ʒss.
Misce et adde	
Glycerini (Price), ...	ʒi.
Unguenti simplicis, ad . . .	℥i.

for it the name of xanthelasmoidea, owing to the resemblance of its nodules to those of xanthelasma. The above term, however, which was applied to it by Dr. Sangster, seems more appropriate, seeing that, histologically, no less than clinically, it partakes of the characters of urticaria.

It first makes its appearance in infancy, almost always before the sixth month, and generally much sooner—even a few days after birth—and evidently has a tendency to die out at the age of nine or ten, or at all events before manhood is reached. It seems to be much more frequent in boys than in girls. It occurs in those who otherwise enjoy fair health, and is not distinctly hereditary, although in at least one of the recorded cases the mother was subject to urticaria. It may implicate any part of the surface, but generally first attacks, and is most pronounced upon, the trunk, and, later on, the extremities; the face and neck less frequently suffer, and the palms and soles very exceptionally, but sometimes the buccal mucous membrane is involved. While resembling urticaria in many respects, it differs from it in others, and especially in the long presistence of the wheals or nodules, and in the early, striking, and long-continued pigmentation. The following case, recorded by Dr. Colcott Fox in an excellent paper on the subject,* which was sent by Dr. Propert to the late Dr. Tilbury Fox in 1877, gives a good picture of the disease as commonly observed:—"The boy was then eight months old, and the surface generally was studded more or less with eruption. According to the mother's statement, they noticed on the child at the age of five or six weeks 'distinct little blisters,' which gave place to brownish-red raised patches. The eruption subsequently appeared as copper-coloured blotches under the skin. The mother thinks they commenced on the head and forehead, and later spread between the shoulders and over the back and trunk generally by the time the child was three months old. At eight months the face was certainly only very slightly involved.

"In May, 1878—*i.e.*, at sixteen or seventeen months of age—the surface was thickly sown with slightly raised, congested, coarsely-granulated spots and with pigmentary stains, mostly discrete, oval, or rounded, and the size of a split-pea, but many larger and irregular from confluence with an ill-defined outline. The flanks were much affected, the abdomen and upper extremities moderately, and the legs increasingly so. Fresh lesions, which had recently appeared on the forehead and face, were more hyperæmic than the older ones, and had distinctly an urticarial element; a little later they became like erythema papulatum, only with a deeper, duller red tint. The colour and amount of irritation they gave rise to, however, varied, for when quiescent for some time they acquired a brownish or buff-coloured tint, and were but little itchy, but if irritated—for instance, by rubbing—they get hyperæmic and itchy. When the skin was irritated by washing, &c., white wheals arose. The mother suffers from urticaria, but there is no struma and no phthisis on either side, and the father's family is an exceptionally healthy one. The child under consideration is also fairly healthy, as are his brothers and sister. . . . In 1880 the eruption was in about the same condition."

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* *Medico-Chir. Trans.*, vol. lxvi.

Thomas R., aged fourteen months, was admitted to the Western Infirmary of Glasgow on 6th April, 1888. The family history is good, his parents are living and healthy, and he is the youngest of three children, the other two, aged ten and four years respectively, being quite well. From birth the tint of his skin was remarked to be rather darker than that of the two preceding children. When three months old, there were observed simultaneously, a swelling at the angle of the jaw under the right ear, and dark brown spots on the abdomen. The swelling seems to have been an abscess, it was opened and a quantity of pus escape, the wound healing in a week and giving no further trouble. The pigmentation at first consisted of dark brown patches around the umbilicus, and to a less extent on the back. These gradually spread till the whole body and limbs were affected, but they did not cause much discomfort, being only itchy when he got heated. Three months ago a new development appeared, according to the mother, in the shape of elevated nodules, coming out all over the body and limbs, especially when he got warm at night. At such times he would scratch himself frantically, but he was always relieved on cooling down. A month ago he was weaned, and since that time the condition has progressed with more than usual rapidity. For some six months there has been a good deal of gastric disturbance with vomiting, owing probably to irregularities of diet, but the bowels seem to have been acting satisfactorily.

Present Condition.—The child appears in perfect health and well nourished, but his skin is the seat of a copious eruption. The hands, face, feet, and head are almost entirely free, while it is most abundant on the trunk, especially on the back. It consists of brown spots about the size of split-peas, and in many places they have become confluent. The eruption, which comes out in successive crops, is at first distinctly elevated, and of a partly erythematous, partly pigmentary character, but, as the spots decline, the elevation gradually ceases, and the erythematous character is in great measure replaced by pigmentary deposit. When the child gets warm in bed, or when he is excited, or scratches his skin, many of these spots become for the time distinctly urticarial in character.

As the affection becomes more chronic the eruptive elements become more evanescent, and the succeeding pigmentation less marked; and, as it tends to die out, nothing is to be seen with the exception of the remains of the pigmentary stains. The way in which the eruption comports itself in its later stages is well exemplified by the following statement of Dr. Colcott Fox, with regard to another of his brother's cases:—"In 1878—*i.e.*, five years after the first observation—the eruption was slowly declining in intensity, for the lesions were getting smaller and less numerous. The older ones readily assumed the urticarial condition, however, on being rubbed. From that time the eruption evolved less copiously year by year, and many old stains disappeared, so that, at the Congress in 1881, the difference in the appearance of the patient was very striking to those who had seen him in 1875. Nevertheless, a wheal-like eruption still continued to appear from time to time, but it was noticed that the majority of them disappeared pretty quickly, and failed to leave the stains they formerly did. At the present time, nothing but old stains are to be seen, and these evidently are slowly fading." *

The **treatment**, which is to be conducted on the same lines as in cases of chronic urticaria, has not proved so uniformly satisfactory in its results, so that it is fortunate that, with the approach of puberty, the disease has a tendency to disappear spontaneously.

V. PRURIGO.

Syn.—*Prurigo of Hebra.*

In earlier days the term prurigo was not accurately defined, and included several distinct affections, as is apparent from the writings of Bateman, whose definition of it is as follows:—"Severe itching, increased by sudden exposure to heat, affecting either the whole surface of the skin, or a part only: in some instances without any apparent eruption; in others accompanied with an eruption of papulæ nearly of the same colour with the adjoining cuticle." †

Nowadays it is used in a different and much more restricted sense, being generally applied to a distinct pathological entity, for the accurate description of which we are indebted to Hebra; at least it is in this sense that it is employed in the present section.

A great many theories have been broached with regard to its etiology, most of them without sufficient grounds, and some of them very absurd, so that, until more light is thrown upon the subject, it is more becoming to confess that we know very little with regard to its source. The fact, however, that it is met with almost exclusively amongst the neglected children of the poor seems to lead to the conclusion, that defective diet and absence of proper hygienic surroundings are favourable to its occurrence. It is more frequent in males than in females, in the proportion of nearly 2 to 1; it generally makes its appearance in infancy, and is usually worst in cold seasons, while hot summer weather is most pleasant to the sufferer. It is to a certain extent hereditary, and is apt to occur in the offspring of tuberculous mothers.

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* *Loc. cit.*

† *A Practical Synopsis of Cutaneous Diseases*, by Thomas Bateman, M.D. Seventh edition. London, 1829. p. 21.

The following is a summary of its leading characteristics as first graphically portrayed by Hebra :—It commonly commences in infancy —usually at first upon the legs—in the form of wheals like those of nettlerash : these come and go from time to time, but at last, generally when the child is from five to seven years of age, the symptoms of the typical affection manifest themselves. At this period numerous solitary papules, about the size of hemp-seeds, make their appearance, and, as at first these are little elevated and of the same colour as the surrounding skin, being thus more readily felt than seen, they are very apt to be overlooked. They are exceedingly irritable, and sooner or later the scratching makes them reddish and more distinctly elevated : their summits too are apt to be torn by the nails, and the serum or blood which escapes dries up into blackish or yellowish crusts, which surmount the papules. The congestion induced by the scratching leads to an excessive deposit of pigment in the mucous layer of the epidermis, so that the skin gradually assumes a dusky or even deep brown tint. By degrees many of the downy hairs which stud the surface are torn out, and those which remain are short and stiff. The upper layers of the epidermis are apt to be detached, so that the surface is more or less covered with a fine mealy dust, which adheres to the parts below, and gives to them a pityriasis-like appearance. The normal lines and furrows of the skin, too, become exaggerated and further apart, so as to give to the skin a coarse appearance and feeling, and, if it is pinched up between the finger and thumb, it is found to be decidedly thickened. In typical cases, and where the disease is most developed, "the skin feels as rough as a file, and, when the closed hand is passed over it, produces a sound like a short-haired nail-brush or rough paper, and causes a pricking sensation of the fingers."* In aggravated cases suppuration attacks the summits of many of the papules, and an artificial eczema—especially on the legs—is apt to be developed, which may lead to errors of diagnosis. In these cases the neighbouring glands are apt to become enlarged, particularly the inguinal and those on the front and side of the thighs, and may attain even the size of small oranges ("prurigo-buboes" of Hebra).

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* "On Diseases of the Skin," by F. Hebra, M.D. *New Syd. Soc. translation*, vol. ii., p. 260. London, 1868.

The eruption is much more severe at some parts than at others; it is always worst upon the extremities, is more marked upon the extensor than on the flexor surfaces, and upon the legs than upon the arms, and diminishes in intensity from below upwards. The forearms suffer more than the upper arms, just as the legs are more implicated than the thighs. The trunk of the body is generally markedly affected, although not so much so as the extremities; the head escapes, although the hair is dull, feels dry, and often looks as if sprinkled with dust. The neck, flexor surfaces of the joints, scrotum and penis, palms, and soles are also usually free, while the face suffers little if at all.

In its fully developed form this is a most loathsome and distressing disease, so much so indeed that patients have even been known to terminate their sufferings by suicide. Authorities assert that, while the disease is common in Austria and other parts of the Continent, it is very rarely met with in England and America; my own experience, however, would lead me to conclude that, in this country at least, it is not so rare as is generally supposed, and is often mistaken for other affections.

Two varieties have been described, p. agria or ferox, that which has just been described, and a milder form, p. mitis, and the two forms are not interchangeable—that is to say, what begins a p. ferox maintains the same character throughout, and the same holds good with regard to p. mitis.

Leloir and Tavernier have carefully examined the nodules of prurigo, and find that, while the cutis is hyperæmic, and slightly infiltrated here and there with embryonic cells, each papule is constantly characterised by the presence of a cavity in the prickle layer of the epidermis—containing only a few necrosed epithelial cells and some nuclei—and resulting apparently from destruction of the prickle cells. The cavity, which occupies the middle portion of the prickle layer, gradually enlarges and approaches the upper surface of the epithelium, destroying a part of the granular, but never invading the horny layer.* There is a difference of opinion as to whether the papules of prurigo are primary, as Hebra held, or secondary, but the balance of evidence is in favour of the view that prurigo is a neurosis which gives rise to itching, and that it is the scratching which leads to the development of the papules.

Diagnosis.—When a patient indulges in excessive scratching, he is apt to injure the skin in the manner above mentioned. This artificial eruption, which I am in the habit of calling a pruriginoid eruption—because it forms a picture somewhat resembling the appearances of true prurigo—is likely to appear as a complication or concomitant of any cutaneous affection associated with much itching. It is this class of affections, therefore, which is most likely to be mistaken for genuine prurigo. It would be out of the question to detail all of these, and therefore two or three only may be mentioned as illustrations.

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* *Annales de Derm. et de Syphiligraphie*, vol. x., No. 7, 1889.

In the true prurigo the eruption, as we have seen, is most abundant, as a rule, on the legs below the knees; in scabies, on the other hand, the pruriginoid eruption is in typical cases most marked on the fore-arms, abdomen, thighs, and hips; while in phtheiriasis corporis—the disease due to the presence of lice—the shoulders, and parts of the body tightly embraced by the clothing (the waist, for example) are most certain to suffer. In addition to this, we have the other characters of prurigo, as above mentioned, on the one hand, and those of scabies and phtheiraisis on the other (see descriptions of these diseases), to guide us to a correct diagnosis.

In recurrent nettlerash (Urticaria perstans), the characteristic wheals described under that head may be absent when the patient is brought to us, and the only manifestation may be a pruriginoid eruption, the result of the scratching; but the situation of the eruption produced by the scratching will vary with the seat of the urticaria, and, on inquiring into the history of the case, we find that the itching sets in when the nettlerash comes out, and subsides along with it: all the other characters of prurigo are, moreover, absent.

The **prognosis** is very unfavourable, if we are to accept as correct the opinion of Hebra, who wrote, "He may do whatever he pleases; his malady will follow him to his grave," and again, "all that the physician can do is to use means by which the sorely tried sufferer's lot may be rendered more tolerable, and he be prevented from falling into utter despair." * If applied to cases of prurigo, as met with in this country, such a prognosis is far too sweeping, and my own experience would lead me to say that, in the case of children at all events, by long perseverance in appropriate treatment, the patient may ultimately be freed of his malady.

Treatment.—Bearing in mind what has already been said under the head of etiology, it will be obvious that the diet of patients suffering from prurigo should be generous, and that their hygienic and other surroundings should be most carefully looked to. Any derangement of the general health which may be present must, of course, be corrected on general principles, and, when this has been accomplished, cod-liver oil and tonics are decidedly indicated, and above all a long continued course of arsenic in full doses. In some cases also the internal administration of carbolic acid in doses for adults of about 4 grains thrice daily is beneficial. We may also get good results from the subcutaneous injection of pilocarpine at bedtime in a sufficient dose to produce free perspiration (grain $\frac{1}{12}$ or upwards), and by the administration of antipyrin (beginning with a dose of 2 grains to a child of two, and gradually increasing). I cannot, therefore, agree with Hebra, who wrote that "there is no internal medicine and no special regimen which can influence prurigo in even the slightest degree, either for better or worse."*

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* *Op. cit.*, p. 263.

Local treatment is of the utmost importance, especially the use of warm vapour, or Turkish baths, followed by friction with a rough towel, and accompanied by the use of preparations of soft-soap, sulphur, and, above all, tar in some shape or form. A course of salt water or sulphur baths—especially natural sulphur baths, such as those of Wiesbaden, Aix-les-Bains, or Louchon—are highly to be commended. A very good combination is a mixture of equal parts of soft-soap, rectified spirit, and oil of cade, which may be rubbed very firmly into the skin in the morning and removed in the bath at bed-time, after which an ointment containing sulphur may be firmly applied, such as the following:—

℞ Sulphuris,	
Glycerini (Price),	
Olei rusci, āā, ...	ʒvi.
Ung. rumicis, ...	℥ij.—*M.*

Hebra strongly recommended the use of the following modification of Wilkinson's ointment:—

℞ Flor. sulphuris,	
Ol. fagi vel Ol. cadini, ana, . . .	℥vi.
Saponis viridis,	
Adipis, ana, ...	Oi.
Cretæ, ...	℥iv.—*M.*

"I order the patient," he wrote, "first to take a bath, and then, without putting on his clothes again, to lie, quite naked, between blankets for at least six days and nights without interruption, while every night and morning a sufficient quantity of the ointment is thoroughly rubbed into the whole surface of the body. When this period has expired, the patient leaves his bed, and remains for three days without any further treatment, until the epidermis has been partly shed; and when, on the tenth day, he washes and bathes, he will, if the subject of only slight prurigo, appear quite free from it, while even a severe case will be decidedly relieved. The unpleasantness of this treatment will always be well borne, because, during the whole time, the patient is free from itching, and can sleep quietly. In fact, he is generally so pleased with it, as very willingly to submit to a second or even a third repetition." * In some cases benefit is derived from the daily use of baths of corrosive sublimate, 2 drachms of which are dissolved in each, a wooden tub being used for the purpose. Dr. Ehlers, of Copenhagen, strongly recommends the use of a 10 per cent. ointment of naphthol, in combination with tepid baths, which, he says, has yielded marvellous results. This remedy is also highly praised by Kaposi, who, however, uses a 1 per cent. to 2 per cent. ointment, with which it is well to commence with. Besnier favours the application of cod-liver oil, with the addition of a little naphthol.

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* *Op. cit.*, p. 278.

Did time permit, endless modifications of the treatment sketched out might be mentioned, but sufficient has been said to indicate the line of treatment from which benefit is likely to accrue; and, in conclusion, it may be said that, if steadily persevered with long after the skin has resumed its healthy appearance, there is a fair hope of our being able ultimately to eradicate the disease.

VI. HERPES.

(ἕρπειν = to creep).

This term is employed by many in the present day to signify two distinct forms of disease—1st, ringworm of the head and body (Herpes tonsurans, and Herpes circinatus); and 2nd, a group of affections running an acute course and characterised by the formation of clusters of vesicles. Such a nomenclature is exceedingly confusing, and, as tinea is the generic term for affections of the skin dependent upon vegetable parasites, it is very desirable that ringworm of the head and body should always be styled tinea tonsurans, and tinea circinata, and that the term herpes should be restricted to the second group of affections. It is true that it is not a very appropriate appellation, seeing that the creeping character is not observed in them; but it has been sanctioned by long usage, and it would be very inconvenient now to attempt to overturn it; at all events it is in this sense that it is employed in the present volume.

Herpes, then, may be defined to be an acute, non-contagious, affection, characterised by the development of one or more groups of vesicles, and accompanied by burning heat, pain, or itching, which

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* *Op. cit.*, p. 275.

runs its course in from one to three or four weeks. A good many varieties of herpes have been described, but it will only be necessary to refer to a few of the more important.

Herpes facialis (*Hydroa febrilis*) is the most frequent and best known of these. The parts most frequently attacked are the red portions of the lips or their neighbourhood (hence the term herpes labialis), but any part of the face or even the mucous membrane of the nose, mouth, palate, or tongue may be involved. Usually there is only one patch, but not unfrequently there are several which come out at the same time, and which vary in size from that of a threepenny-piece to a shilling. At first there is redness with a feeling of stiffness and burning heat, the affected surface being studded with little elevations, which soon develop into vesicles often of large size; these at first are filled with clear serum, which soon becomes opaque or even purulent. Within a few days these dry up into thin crusts, in which stage more or less itching may be present, and, when they fall off, the skin gradually resumes its normal appearance. When the mucous membrane is attacked, the vesicles, owing to the maceration of the epidermis, soon burst, leaving excoriated points, corresponding with the seats of the previous vesicles. Herpes facialis often makes its appearance without any appreciable cause, but in many cases it is consequent upon catching cold or upon digestive derangment; it is, too, a very frequent accompaniment of febrile affections, especially of pneumonia, in which disease its occurrence may even aid the diagnosis.

Hutchinson has long been of opinion that this affection is symptomatic of, and directly due to, chills or rigors, being caused by universal tension and partial closure of the arteries. But this explanation cannot hold in all cases, because herpes may occur without any antecedent shivering.

Herpes præputialis (*H. progenitalis*).—This form of herpes, though oftenest met with on the prepuce, may be seated upon the glans or even upon the integument of the penis, and it is not uncommon in women on the labia and neighbouring parts. The vesicles, when seated on the mucous membrane, as in the case of the mouth, very soon rupture, so that often, by the time that attention is directed to the part by the burning heat, only a group of little excoriations is to be seen. These are apt to be irritated by the secretion from the sebaceous follicles, and may then be mistaken for soft chancres, especially as the eruption sometimes follows connection. Where there is any doubt, it is better to withhold our opinion for a few days, when, if it is herpes and is properly treated, it soon disappears. If, however, there is still uncertainty, all doubt may be set at rest by inoculating a neighbouring part with the secretion, which will yield a soft chancre if the affection is venereal, while the result will be negative if it is herpetic. This variety of herpes is often very troublesome, owing to its liability to recurrence, even half a dozen times in the course of a year. It is said to be more apt to occur in those who have suffered from venereal disease.

Herpes iris—*Hydroa* (ὕδωϱ = *water*)—is a comparatively rare affection of uncertain nature, although it is most commonly met with in young persons, and in females (particularly during pregnancy) oftener than in males: it most frequently occurs in spring and in autumn, and repeated attacks are common. It is apt to result from exposure to cold. In a case recently encountered the disease had lasted on and off for three years. The attacks, which lasted generally for a couple of weeks, recurred at intervals of from three weeks to as many months, and the first seizure distinctly followed upon a severe chill. The parts most usually involved are the dorsum of the hands and feet and the fingers and toes, from which it may spread to the forearms and legs, but the upper arms and thighs are less frequently affected, while the face and trunk usually escape, although in very rare cases the eruption is generalised and may even implicate the mucous membrane of the mouth and throat. Each patch, which is the seat of burning heat or itching, commences with the development of a central papule, which soon changes into a vesicle; outside this a ring of vesicles soon forms, which is often succeeded by a second or even a third, and between the vesicles the skin is reddened and slightly elevated. As has been remarked by Duhring,* "the general hue of the eruption is peculiar. The colours are varied and delicate in tint, and generally pervade the whole patch. It is from this circumstance that the affection has received the name iris. All the colours of the rainbow, subdued in tone, may usually be observed at one time or another in the course of the disease—the red, yellow, and violet shades predominating." The vesicles in two or three days dry up into yellowish crusts, which soon fall off, those in the centre desiccating first, and while the peripheral ones are being produced, so that at last vesicular rings are observed, enclosing skin which is either normal or more or less pigmented. The vesicles are at times abortive, but, on the other hand, they occasionally run together forming irregular bullæ, or bullæ may form from the first (hydroa vesiculeux bulleux of Bazin). The patches vary in size, from that of a shilling to a crown-piece or more, and sometimes neighbouring lesions coalesce, forming large irregular patches. There may be only two or three or as many as a dozen patches: in the latter case there may be slight fever. The eruption has a tendency to come out in successive crops, in which case the whole duration of the complaint may be a good many weeks. It is now pretty generally conceded that herpes iris is but a variety of erythema multiforme (see p. 104), and cases have been observed in which, at some parts, the appearances were those of herpes iris, at others those of erythema multiforme. An observation of individual patches may lead to error of diagnosis—with pemphigus, for example, when bullæ form; but a study of the whole eruption, especially in the early stage, will generally lead to the discovery of typical patches, which cannot be mistaken for any known disease, especially if its seats of predilection are kept in view.

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* *A Practical Treatise on Diseases of the Skin*, by Louis A. Duhring, M.D. Second Edition, p. 222. Philadelphia: J. B. Lippincott & Co., 1881.

Herpes zoster (*Zona—Shingles*) is the most serious of the forms of herpes, and differs from the others in that the eruption follows the course of certain cutaneous nerves, and is frequently accompanied or followed by neuralgia. It is a commoner affection than the last, for I find that in 10,000 consecutive hospital cases it occurred 32 times, and 6 times in 2,000 private ones.

In its most typical form—that to which the term used to be restricted—it affects one side of the chest, generally the right, and follows the course of one of the intercostal nerves, so that the site of the eruption corresponds to that of the intercostal spaces. Isolated, small, oval or rounded patches make their appearance, beginning at the spine, and gradually spreading forwards, though never extending beyond the middle line. Each consists at first of a group of papules which soon pass into vesicles, although not unfrequently the latter are abortive on some of the patches, the papular stage not being passed. The vesicles are of large size (phlyctenular), and at first contain clear serum, but soon the contents become turbid, or even purulent, especially if the patches are irritated by pressure or friction. The vesicles often coalesce, and, as a consequence, bullæ of irregular shape are occasionally observed. When the eruption is on the decline, the contents of the vesicles dry up into thin brown crusts, and when these fall the new skin is at first of a pinkish colour. When suppuration is a marked feature, ulcers may form, or even eschars in broken-down constitutions (Zona gangrænosum), which are necessarily followed by permanent cicatrices.

Sometimes the eruption does not encircle one-half of the body, there being merely a patch behind, near the spine, and one in front extending outwards from near the sternum, the intervening skin escaping; and, in very rare cases, both sides of the chest are attacked, but then the eruption, on one side, is usually on a lower level than on the other.

In mild cases there is little if any constitutional reaction, and only slight heat or itching, but in severe ones there may be decided fever, with a feeling of burning, scalding, or tingling at the part, which may be very distressing and prevent sleep. Neuralgic pains, too, are very common, and may precede the eruption, but more frequently they accompany it, and they sometimes, owing to chronic neuritis, continue long after it has disappeared. The following case—that of a medical man—illustrates the occasional distressing character of these symptoms. I quote from his own letter:—"On September 23, 1861, felt symptoms of the approach of some disease—a deadened or numb sensation on the left side of the neck and scalp. Through the night became restless and very unwell, and fainted. Shortly after this I felt a slight stinging sensation at the part, and on the morning of the 24th a few spots of eruption were seen on the neck, which proved to be the commencement of an attack of shingles.

"September 25. Stinging sensation very severe and constant, and continued until the eruption was at its height, which was about the ninth day. Dusting the neck with a powder composed of oxide of zinc, starch, and camphor, and covering it afterwards with cotton wool, was most agreeable and soothing. The eruption now began to blacken and wither, and this was attended by the most intolerable itching and tingling, so that it was with the utmost difficulty that I refrained from seriously injuring the parts. This continued for at least a week, and of the various applications employed for its relief, gentle friction with the hand was the most agreeable.

"By this time I had felt slight twinges of neuralgic pain at the part, but it was about fifteen or twenty days before it became intense. So dreadful was it at one period that I could allow nothing to touch the part—not even a bit of wadding—without producing a most violent paroxysm. This continued for nearly three weeks, and was not mitigated by the use of opiates, but the application on three occasions of half a dozen leeches always gave relief, and was followed by several hours of sound and refreshing sleep.

"On the neuralgia subsiding, the part felt quite benumbed and insensitive—in fact, a partial paralysis followed—and even now, six months after the attack, sensation is not nearly restored. A number of white cicatricial spots mark the seat of the previous disease."

The duration of an attack of zona is generally from one to two weeks, but, as illustrated by the preceding case, it may be kept up indefinitely by the neuralgic complication. Second attacks are rarely observed. Although the eruption is most frequently met with on the chest, it may, as in the case just quoted, attack other parts of the trunk, as well as the extremities, the head, and the neck, where it follows a similar course; hence, numerous varieties have been described, which it is quite unnecessary to discuss fully, but which have thus been classed by Bärensprung :—

"(*a.*) The '*Zoster facialis,*' always confined to one half of the face, occupies the surfaces of the skin and mucous membranes supplied by the fifth nerve. A form of it is the '*Z. labialis.*'

"(*b.*) The '*Zoster occipito collaris*' follows the distribution of the occipitalis minor, auricularis magnus, and superficialis colli nerves, derived from the cervical plexus.

"(*c.*) The '*Zoster cervico-subclavicularis*' corresponds to the descending (supra-sternal, supra-clavicular, supra-acromial) superficial branches of the cervical plexus.

"(*d.*) The '*Zoster cervico-brachialis*' is due to a morbid condition of nerves belonging to the brachial plexus. It may be confined to the upper arm (Z. brachialis), or the forearm, or even the hand.

"(*e.*) The '*Zoster dorso-pectoralis.*'—In this form the affection begins over the spinal column, generally occupying a surface corresponding to three vertebræ; it spreads obliquely downwards to the side of the chest, and thence passes, ascending slightly, to the sternum. The nerves concerned in this variety of zoster are the third to the seventh dorsal.

"(*f.*) The '*Zoster dorso-abdominalis*' affects the lower part of the back, its upper limit being the eighth dorsal, its lower the first lumbar vertebra. It extends over the surface of the abdomen as far as the linea alba.

"(*g.*) The '*Zoster lumbo-inguinalis*' begins in the lumbar region, and spreads horizontally forwards to the linea alba, obliquely downwards and forwards to the mons veneris and genital organs, and also downwards to the skin of the gluteal region and the outer surface of the thigh. It corresponds to branches of the upper lumbar nerves.

"(*h.*) The '*Zoster lumbo-femoralis*' occupies the distribution of the external cutaneous, genito-crural, anterior crural, and obturator branches of the lumbar plexus. The wide cutaneous distribution of these nerves enables us to understand how extensive and severe this variety of herpes may sometimes be. In other cases it is confined to the surface of the thigh, only certain branches of these nerves being then affected (Z. femoralis).

"(*i.*) The '*Zoster sacro-ischiadicus*' answers to the cutaneous supply of the branches of the sacral plexus." *

It would be quite impossible for the careful observer to mistake this disease for any other, although, when the chest is attacked, the neuralgic pain which so often accompanies it might lead to a suspicion of pleurisy. This source of error can be readily avoided by exposing the skin when the eruption is discovered.

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* "On the Diseases of the Skin, including the Exanthemata," by F. Hebra, M.D., vol. i., p. 373. Translated by C. Hilton Fagge, M.D. *New Syd. Soc. translation.* London, 1866.

Ætiology and Nature.—Zona is manifestly a neurotic affection, and is closely allied to neuralgia, but it is based upon organic disease. Sometimes a peripheral neuritis or perineuritis is at the root of it, but more frequently, as pointed out by Bärensprung and others, there is a lesion of the posterior column of the cord, the posterior root, or the posterior ganglion of the nerve supplying the affected region, with a descending neuritis. It generally arises from exposure to cold, but it may result from many forms of irritation of, or injury to, the nerves, such as blows, the extension of inflammation from neighbouring parts, the application of the galvanic current, &c. It is also sometimes the result of reflex irritation, and I have had frequent opportunities of verifying Hutchinson's statement that it is very apt to make its appearance in patients who are undergoing an arsenical course—a curious illustration of how a nerve tonic may favour the development of a neurotic affection.

Treatment.—*Herpes facialis* disappears speedily, even if no treatment is adopted. We must be careful, however, to protect the part from injury; dusting it with some soothing powder (see treatment of eczema, p. 168) is often agreeable. In the crusted stage, if there is a tendency to fissures, as we sometimes find when the eruption is on the lip, or at the angle of the mouth, some soothing ointment, such as a mixture of 1 part of glycerine to 4 of cold cream, may be applied with advantage. At the same time we must of course treat the primary disease—if any—with which it may be associated.

In cases of *Herpes præputialis* the parts must be kept very clean by sponging occasionally with a little tepid distilled water containing 1 or 2 grains of sulphate of zinc and of carbolic acid in the ounce. After this the parts may be dusted with some soothing powder, such as a mixture of equal parts of powdered oxide of zinc and starch, and the prepuce must be kept separate from the glans with the aid of a small piece of clean linen. In the intervals between the attacks the parts must be kept clean, and all sources of irritation avoided, and benefit may perhaps be derived by sponging them with a lotion of liquor plumbi diacetatis dilutus, 20 min. to 1 ounce of distilled water. At the same time we must attend carefully to the general health, after which a course of arsenic may be tried. In *Herpes iris* the local treatment must be similar to what has been indicated in connection with the previous varieties of herpes—*i.e.*, it must be of a soothing character. Internal medicine, with the exception of arsenic, seems of little service, except in so far as it is advantageous to correct any derangement of the general health which may be present; and in all cases the state of the digestive organs must be carefully attended to, seeing that they are often at fault.

In cases of *Herpes zoster* we must avoid all irritation, such as the friction of underclothing, and in severe cases the patient must be kept in bed. The parts may be dusted with one of the soothing powders already mentioned (see p. 168), or, as recommended by Duhring, painted with flexible collodion containing 10 grains of morphia to the ounce. If the skin is very sensitive, and the patient cannot bear even the weight of the bedclothes, it may be covered up with strips of emplastrum lithargyri firmly applied, or with zinc-ichthyol gelatine (p. 172): this often gives relief, owing to its supporting the inflamed part and preventing the friction of the clothing. The diet should be light, and saline aperients may be used, if there is digestive derangement or constipation, while opiates may be administered at night, if necessary. Some physicians likewise have recommended the administration every three hours of $\frac{1}{3}$ grain of the phosphate of zinc, which is said to control the pain and to abort the eruption. If ulceration should occur, it must be treated upon general principles, and in broken-down subjects tonics, such as quinine and iron, are to be recommended. For the neuralgic pain, anti-neuralgic remedies may be required, such as antipyrin, quinine, and arsenic in full doses. Local applications, too, such as liniment of belladonna, or a weak, continuous current—one sponge being applied over the spine, the other over the seat of eruption, for a quarter of an hour night and morning—may be tried. Dr. Meredith* recommends the painting of the parts with oleum menthæ piperitæ to allay the neuralgic pains, both when the eruption is in the acute stage and after it is gone. He finds it more effective than any other anodyne application. In obstinate cases, and when the pain is severe, the subcutaneous injection of morphia may be resorted to, or blisters may be applied over the root of the nerve.

VII.—DERMATITIS HERPETIFORMIS.

Syn.—*Dermatitis pruriginosa* (White); *Dermatitis multiformis* (Piffard); *Tropho-neurotic dermatitis* (Morrow); *Dermatite polymorphe prurigineuse chronique à pousées successives* (Brocq); *Pemphigus pruriginosus* (Chausit and Hardy).

We are indebted to Duhring for the first accurate description of this disease, or group of diseases, and for the name which it bears, his first communication on the subject having been made to the American Medical Association in 1884.*

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* *Birmingham Medical Review*, June, 1882.

It is probably not so rare an affection as some suppose, seeing that it is apt to be mistaken for pemphigus, erythema multiforme, eczema, &c. The most prominent characters of the disease are these:—

1. It has a great tendency to be polymorphous, occurring as it does in various forms, which run into, or succeed one another, during the course of the illness, the lesions being erythematous, papular, vesicular, bullous, or pustular, and these may be combined in various ways. In a good many cases the mucous membranes are involved as well, especially that of the mouth and pharynx.

2. It appears in successive crops of eruption (generally more or less in groups or clusters) at irregular intervals, each setting in, as a rule, with some fever and constitutional disturbance.

3. It is accompanied, and often preceded, by intense irritation, burning, or smarting, which may be generalised, or limited to the seat of the lesions.

4. It may attack any part of the body, but seems to have a great tendency to commence on the extremities, especially the forearms. The abdomen, hips, and external aspects of the thighs are also often implicated, but any region may be invaded.

5. It is generally symmetrical.

6. Its course is variable, but it is apt to continue, on and off, for years, relapses being the rule, and the lesions often differing from those of the primary attack.

7. It is generally met with in adults, and in males much more frequently than in females. In the latter it often occurs in connection with pregnancy (herpes gestationis).

8. The general health is usually not much interfered with by it.

9. It is often very rebellious to treatment.

The principal forms of the disease are the erythematous, vesicular, bullous, pustular, and papular.

(*a.*) *Dermatitis herpetiformis erythematosa.*—This eruption is often preceded and accompanied by some fever, and almost always by great irritation of the skin. It may be diffuse, but generally occurs in circumscribed patches of erythematous inflammation; or it may present a semi-urticarial character. The patches have a tendency to heal in the centre, which remains pigmented for a time, and to spread at the edges, which may be elevated; and when neighbouring patches coalesce, they present more or less of a marginate outline. At first they have a bright red colour, which is, however, soon replaced by a violet tint. There is generally a tendency to the development of papules, vesico-papules, or diffuse infiltrations, if not in the first attack, in one of the relapses. The eruption, which leaves behind it pigmented stains for a time, may last for days or weeks, or it may pass into one of the other varieties.

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* In the description which follows I owe much to his papers, and to the admirable volume of Dr. Brocq, entitled *De la Dermatite herpétiforme de Duhring* (Paris, G. Masson, 1888).

(*b.*) *Dermatitis herpetiformis vesiculosa.*—This variety starts with the gradual development of irregularly-shaped vesicles, varying in size from a pin-head to a split-pea, and often at first without inflammatory areolæ. They generally occur in clusters, and when close together often coalesce, in which case a reddish areola is usually present. The eruption is, as a rule, abundant, and here and there papules, vesico-papules, vesico-pustules, and small bullæ may make their appearance. Intense itching, more than in any other variety of the disease, precedes and accompanies the outbreak, and burning and smarting are often complained of. It is the most common variety of dermatitis herpetiformis, and may attack any part; but the neck, back, chest, abdomen, upper extremities, and thighs are most frequently implicated. When the vesicles disappear they are apt to leave scars, the grouping of the scars being characteristic, a point which is much insisted on by Pringle.

(*c.*) *Dermatitis herpetiformis bullosa.*—In this variety the bullæ themselves present the same characters as are found in pemphigus, and vary in size from a split-pea to a walnut; but they have a tendency to appear in clusters of two or three, the intervening skin being more or less inflamed. Moreover, mingled with the blebs, or in their vicinity, vesicles and pustules are usually seen. Otherwise this eruption presents similar characters to the preceding varieties as regards extent, seat, itching, occurrence in successive crops, &c. This is probably the pemphigus pruriginosus of some authors.

(*d.*) *Dermatitis herpetiformis pustulosa.*—This is the most serious form, and is usually preceded and accompanied by considerable constitutional disturbance and fever. The pustules, which develop slowly, and which may appear at any part, vary in size from that of a pin-head to that of a split-pea, and are surrounded by inflammatory areolæ. They are tense or flaccid, and have a tendency to dry up in the centre and to spread circumferentially. At some parts they occur in groups, and sometimes a central pustule is surrounded by a circle of smaller ones, as in herpes iris. Often vesicles and bullæ, papules, and vesico-papules, are mingled with the pustules, or appear in their vicinity, or the eruption may be preceded or followed by one of the other varieties of the affection. It occurs in successive crops, each lasting from one to four weeks, and with intervals of similar or of longer duration, so that the disease may be indefinitely prolonged. It is always accompanied by intolerable irritation.

(*e.*) *Dermatitis herpetiformis papulosa.*—This, the rarest and mildest form, is characterised by the development of groups of a few reddish or violaceous papules, which vary in size, like the vesicles of the vesicular form, resembling the abortive vesicles of some cases of zona, although at times they vesicate on their summits. They are generally excoriated by the patient's nails, and may be covered with scales or blood-crusts. The eruption pursues a chronic course, lasting often a number of weeks; and, as in the other varieties, is followed by more or less pigmentation of the skin. Relapses are to be expected.

In not a few cases of dermatitis herpetiformis all forms of the disease are represented during the course of the illness; or, at one and the same time, there may be a mixture of lesions with no single type predominating, just as in eczema several lesions may be recognised at different parts, or even on the same patch. When new crops of eruption are appearing diarrhœa is far from uncommon, which leads to the suspicion that perhaps a similar eruption is developing on the intestinal mucous membrane.

This is probably not such a rare disease as statistics might lead us to suppose, for, no doubt, many of the cases met with have been classed under other heads, such as pemphigus and erythema multiforme. From the statistics collected by Dr. Brocq, the following facts may be gathered with regard to it. It occurs much more frequently in males than in females, in the proportion of at least two to one, and this is especially true of the more serious cases. It is met with at all ages, but is most common in adults, particularly between sixteen and thirty, and from forty-seven to sixty-two years; and the more severe cases appear, as a rule, in those who have passed middle life. It sets in at all seasons, but perhaps oftenest in spring and autumn. Its connection with the rheumatic diathesis is not clear; at all events, it is manifestly erroneous to consider it in the light of a rheumatic affection as Bazin did (hence the name pemphigus arthritique). But there can be little doubt that persons of the nervous temperament, and those whose nervous systems have been overstrained or worn out, are liable to attack. That it is a dermato-neurosis is further supported by the circumstance that it is a symmetrical eruption; that it not unfrequently partakes of an urticarial character; that intense irritation accompanies and often precedes the outbreak; and that nerve tonics afford the best prospect of a cure.

In many cases the general health is remarkably well maintained and the appetite continues good, even when the eruption is extensive, the irritation extreme, and the sleep disturbed. The whole duration of the disease is indefinite: it often lasts, on and off, for years, and it is occasionally fatal, although generally as the result of some complication.

The disease described by Milton in 1872 under the head of *Herpes gestationis* (Hydroa gestationis of Liveing, Erythema gestationis of Wyndham Cottle, Dermatite polymorphe prurigineuse récidivante de la grossesse of Brocq), must be regarded in the light of a variety of dermatitis herpetiformis, seeing that the characters of the two affections are, in most respects, identical. The former, however, presents the following peculiarities:—

1. The eruption, like that of dermatitis herpetiformis, generally commences on the extremities, but the hands and arms are generally first attacked, or occasionally the umbilicus.

2. It never assumes the pustular form, and, when bullous, the contents of the bullæ rarely become purulent.

3. It always sets in during (and usually during the last six months of) pregnancy, or a few days after confinement; and, in the former case, there is generally a relapse or recrudescence a few days after delivery.

4. It has a great tendency to return, and in an aggravated form, in subsequent, though not necessarily in all, pregnancies. But after several attacks during pregnancy, it may persist for a long time independent of that condition.

The disease described by Hebra in 1872 under the name of *Impetigo herpetiformis* * (Herpes pyæmicus of Ausspitz, Metastatic pustulosis of Neumann), though presenting some of the features of, and considered by Duhring to be identical with, the pustular form of dermatitis herpetiformis, must be differentiated from it. The following are its most salient features:—

1. In all the recorded cases it occurred in pregnant or puerperal females, with one exception, reported by Kaposi—that of a young man, aged 20, who succumbed in a few weeks to a purulent tubercular peritonitis.

2. It almost always commences on the inner aspect of the thighs, whence it spreads to the abdomen, mammæ, extremities, hands, and feet, and, lastly, to the neck and head. The mucous membranes are also often invaded, especially the mucous membrane of the mouth.

3. The eruption consists of groups of superficial pustules, the size of pin-heads, with inflammatory areolæ. These dry up into dirty brown crusts, around which new pustules form. These, in their turn, form crusts, and so the process extends until the eruption becomes confluent,

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* *Wiener Med. Wochenschrift*, 1872, No. 48. A very full account of this affection was recently published by Kaposi in the *Vierteljahr für Derm. und Syph.*, vol. xiv., 1887, p. 273.

and involves a great extent of surface. When the crusts fall there is no ulceration to be seen, but a delicate red new skin, or a surface which is infiltrated, and often exuding like a weeping eczema. Sometimes a similar eruption appears on the tongue and pharynx.

4. There is marked elevation of temperature, and shiverings are usual with each new crop of pustules.

5. It is almost invariably fatal. Of twelve cases observed in Vienna, nine were fatal in the first attack, and two, owing to relapses, in subsequent pregnancies, while only one patient permanently recovered.

It will thus be seen that it differs materially from Duhring's dermatitis herpetiformis pustulosa, especially in that it attacks pregnant and puerperal females almost exclusively, is pustular in character throughout, is attended by high fever, but unaccompanied by itching, and is almost invariably fatal.

The diagnosis of dermatitis herpetiformis is sometimes difficult, and it may be mistaken for erythema multiforme, eczema, lichen, urticaria bullosa, and pemphigus.

Erythema multiforme resembles it in its polymorphous nature and relapsing character, but presents a good many distinctive features.

1. It has a much more marked tendency to appear in spring and autumn.

2. It generally attacks young adults, while dermatitis herpetiformis may occur at any age (although specially between 16 and 30, and from 47 to 62).

3. Its duration is much shorter, generally from one to four weeks, although it may be prolonged by successive crops of eruption.

4. Its special seats of predilection are the backs of the hands, fingers, and forearms, the dorsum of the feet, and the fronts of the legs.

5. The eruption has far less tendency to become vesicular, pustular, or bullous.

6. Itching and burning are not prominent symptoms.

Eczema may be mistaken for it, but in the latter the vesicles are much more variable in size, their form is more irregular, they do not rupture so readily, and they have a greater tendency to grouping. The constitutional disturbance is more marked, the itching more intense and continuous, and the soothing applications, so generally useful in vesicular eczema, are not nearly so efficacious. The disease, too, is much more chronic and more liable to relapse.

Lichenous eczema may be mistaken for dermatitis herpetiformis papulosa, but, in the latter, the tendency to grouping and the slow evolution of the papules, as well as the liability to the occurrence of successive crops at irregular intervals, and the obstinacy with which it resists treatment, should prevent error.

Urticaria bullosa may be confounded with dermatitis herpetiformis when the urticarial element is well marked in the latter. But in the former, the urticarial eruption is readily excited by irritating the skin; the bullæ, as a rule, are much scantier, and they always form upon an urticarial patch.

Pemphigus may be distinguished from dermatitis herpetiformis bullosa by attention to the following points:—

1. In pemphigus the general health is usually much more deteriorated, especially in the later stages.

2. The bullæ have not the same tendency to grouping, and, as a rule, are larger.

3. The polymorphous character of the eruption is either wanting, or is not a prominent feature, nor is there the same variability in the character of the lesions at different periods.

4. Itching and burning are either absent or slight as a rule.

5. The disease occurs with equal frequency in males and females, whereas males are much more frequently attacked by dermatitis herpetiformis (in the proportion of 2 to 1).

Treatment.—Bearing in mind the view, generally entertained, that this is a tropho-neurosis, it is obvious that tonics, especially nerve tonics, are indicated, such as strychnia, phosphorus, quinine in large doses, and, above all, arsenic. The arsenic must be given in full and increasing doses, and when it fails by the mouth, it should be administered subcutaneously. Before using tonics, any derangement of the general health must be corrected on general principles. Overwork, over-excitement, and worry should be carefully avoided.

Local treatment is often useful, and much relief is afforded by puncturing the vesicles and bullæ. Sedative lotions and ointments, such as are used in the treatment of acute attacks of eczema, and which need not be particularised here, are likewise indicated. Duhring, however, holds that the only class of remedies from which benefit is to be expected is stimulants, especially those which act revulsively. Of these, he favours the use of sulphur thoroughly rubbed in (an ointment of ʒij to the ℥i), particularly in the vesicular and pustular forms, and tar lotions (*e.g.*, liquor carbonis detergens ʒi, water ℥iv) in the erythematous variety.*

In cases of *impetigo herpetiformis* we should, in addition, endeavour to maintain the patient's strength, and to keep the fever in check by means of antipyretics, but we must not be too sanguine of success.

VIII. PEMPHIGUS (*Pompholyx*).

The main feature of this eruption consists in the development of bullæ, as is implied by the name, which is derived from the Greek word πέμφιξ = a bladder. If we except bullous eruptions met with in connection with dermatitis herpetiformis, with syphilis in the infant (the so-called pemphigus neonatorum), and those which have been observed in the adult (the so-called pemphigus syphiliticus), and which are described among the syphilitic affections, there is only one true bullous disease to which the term pemphigus is applicable, although it is met with in two forms, viz. :—

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* *The American Journ. of the Medical Sciences*, Feb., 1891.

Pemphigus vulgaris.
Pemphigus foliaceus.

It is quite true that bullæ occasionally make their appearance on the skin, when there is no question of pemphigus : we find it at times, for example, in erysipelas (E. bullosum), urticaria (U. bullosa), peliosis rheumatica (Purpura pemphigoides), and eczema of the hands and feet, but they are then merely accidental complications of pre-existing diseases, and are referred to in connection with them.

Pemphigus vulgaris (*Pemphigus diutinus*).

This is a comparatively rare affection, as is shown by the fact that, amongst 39,681 cases of skin disease occurring in my practice, there were only 111 of pemphigus; and it is not improbable that these were not all in separate patients, pemphigus being exceedingly liable to relapse. In this complaint bullæ make their appearance in successive crops, though not always in precisely the same manner. "Sometimes," wrote Hebra,* "a circumscribed light-red spot appears, perhaps of the size of a lentil or fourpenny-piece ; this is paler in the centre, and may even present a tinge of white, indicating the point at which the bleb is about to form, and from which it will spread outwards over the surrounding red surface. In other cases the spot, besides being red, is raised above the level of the surrounding skin, and in fact is at first a wheal, passing afterwards into a bleb. In yet other cases the bleb is not preceded either by a red spot or by a wheal, but begins originally as a small collection of clear fluid beneath the cuticle. Thus hyperæmia of the skin may exist before exudation is poured out, or the latter may be formed before any congestion of the papillary layer is discoverable. In this respect the bullæ of pemphigus are precisely like those which are produced artificially by vesicants, and therefore, by watching the formation of a *blister*, one can sufficiently study the process by which blebs in general are developed."

The bullæ, which are sometimes surrounded by a red areola, are oval or rounded, and vary in size from that of a pea to a walnut, or even an orange. It may happen that most of the bullæ are but the size of large (phlyctenular) vesicles, so that the eruption has more the characters of a vesicular than a bullous one; but, when we find large isolated vesicles scattered over the skin, and along with them even two or three bullæ, we cannot be wrong in considering the case to be one of pemphigus. The blebs are generally tense and distended; sometimes, however, they are flaccid, very little fluid intervening between the separated epidermis and the cutis vera: this fluid, which is feebly alkaline, is at first clear, but later on it becomes milky owing to admixture with epithelial cells and pus corpuscles, and sometimes it consists of pus, or, in exceptional cases, in broken-down subjects, of a mixture of blood and pus. Sooner or later the little blisters burst, and crusts are left, which vary in character and in thickness according to the nature of their fluid contents, underneath which new epidermis forms. When the crusts fall off, reddish or purplish marks or pigmentary stains indicate for a time the seat of the previous bullæ. It is only in exceptional cases, as the result of neglect, improper treatment, or great deterioration of the general health, that ulcers are left; and in very rare cases indeed the eruption tends to become gangrenous (Pemphigus gangrænosus).

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* "On Diseases of the Skin," by F. Hebra, M.D. *New Sydenham Society's translation*, vol. ii., p. 388. London, 1868.

As the primary bullæ are running their course, new ones are apt to make their appearance, and these in turn are followed by successive crops, hence the term "Pemphigus bulleux successif," applied to the disease by French authors. After the complaint has continued for some time the eruption in all its stages may often be seen upon the skin at one time—viz., bullæ flaccid and tense, some clear, some milky, crusts, and reddish and pigmented markings, while the whole skin is apt to assume a dusky tint from increased deposit of pigment in the mucous layer of the epidermis, as the result of the long-continued determination of blood to the skin.

The skin is occasionally the seat of intense irritation (P. pruriginosus),* but the eruption is often more an inconvenience and disfigurement than a source of distress and pain to the patient, although some burning and tension may be experienced when the bullæ are forming, and some stiffness and discomfort at the seat of the crusts. The eruption is oftenest met with on the face, especially round about the mouth, and on, and in the vicinity of the genital organs, and next to this on the extremities, especially the legs, although any part may be attacked. It is also occasionally met with on the mucous membrane, especially of the mouth and pharynx, and in exceptional cases on the eyes;* in the vagina, and even in the intestines (Pemphigus intestinalis). Alibert has recorded a case in which the intestines were studded with hæmorrhagic extravasations and ulcers, while two enormous bullæ were found on the colon.

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* It is a question whether most of these cases should not be classed under the head of dermatitis herpetiformis bullosa.

It is exceptional, however, to find distinct bullæ upon a mucous membrane, as the epithelium covering it is so tender as to give way whenever the serum begins to accumulate, so that the surface looks like an excoriation covered with a whitish membrane.

The general health often appears to be good at first, and may remain so throughout, and generally there is little or no fever—at all events, I have never met with the so-called febris bullosa, or acute pemphigus; but, if the disease is obstinate, and appears in an aggravated form, the health is sure to suffer sooner or later—the appetite fails, the spirits become depressed, emaciation becomes more and more pronounced, and diarrhœa frequently precedes the fatal issue.

When a patient has once suffered from this complaint, relapses are the rule; but the intervals between the attacks vary much in different persons, and some have a tendency to suffer at certain seasons, especially in the spring. A first attack, except in old people, rarely proves fatal, but every relapse increases the gravity of the case, the most serious symptoms being the great abundance of the eruption (especially if the bullæ are flaccid, or filled with sanious pus, or end in ulceration or gangrene), the onset of fever, and pronounced deterioration of the general health.

Pemphigus foliaceus.

This variety of pemphigus was first accurately described by Cazenave, who gave it the appropriate name which it still bears. It is fortunately very rarely met with—only twice out of 40,054 of my cases—for it is almost uniformly fatal. It commences by the development of one or more bullæ, which may appear upon any part; but, in the most typical cases, a single bulla makes its appearance on the front of the chest; it is flaccid, so that at this stage, as has been well remarked by Hebra, the eruption presents the aspect of a superficial scald. The blister dries into a thin yellowish crust, at the edge of which the bullous formation makes its appearance, and the disease gradually extends by circumferential extension until the whole cutaneous envelope is apt to be involved, although a year may elapse before the eruption is universal.

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* When the eyes are attacked, shrinking of the conjunctiva is apt to ensue, with, as a consequence, deformity of the lids, inversion of the eyelashes, irritation and inflammation of the cornea, and, sooner or later, almost complete loss of vision (see an interesting paper on the subject by Mr. Malcolm Morris in the *Brit. Journ. of Derm.*, April, 1889, p. 176).

When fully developed, it somewhat resembles eczema, although the latter is never universal; the surface is covered with large yellowish crusts, which have been compared by Cazenave to flakes of French pastry, and these are interspersed with raw surfaces, exuding a thin secretion, and exhaling an offensive odour. At this stage the bullous character may be altogether lost, or overlooked, owing to the extensive crustation.

The general health may be fair enough at first; but, when the epidermis becomes extensively separated from the true skin, the health gradually gives way, just as, though more surely than, in the former variety. Almost all hope of improvement then vanishes.

Diagnosis.—*Pemphigus vulgaris* may be mistaken for syphilitic pemphigus, and those diseases formerly mentioned as being at times complicated by the development of blebs may possibly be confounded with it; but a reference to their description will help the reader to arrive at a correct diagnosis. The careless observer might mistake it for eczema—an error which I have seen committed—because the crusts left by the drying up of the contents of the bullæ are not unlike those of eczema. There is, however, an almost complete absence of the other symptoms of that disease, and, moreover, if the whole body be carefully examined, one or more bullæ will usually be found, or the history of such, which should prevent error.

Pemphigus foliaceus may likewise be mistaken for eczema; but the following points—most of which apply with equal force to the case of pemphigus vulgaris—serve to distinguish these two diseases from one another:—

Pemphigus foliaceus.	**Eczema.**
1. The fully-developed disease is universal.	1. May be extensive and generalised, but never universal.
2. In typical cases begins on front of the chest.	2. Rarely, if ever, begins on front of the chest.
3. Flaccid bullæ discovered, or a history of such.	3. No bullæ, unless very exceptionally at parts where skin is very thick, as on the palms, where vesicles may run together and form a blister.
4. Skin not infiltrated.	4. Skin infiltrated.
5. Itching *generally* not much complained of.	5. Itching usually marked.
6. Crusts thin, and like flakes of French pastry.	6. Crusts thicker, and not presenting this special character.
7. Generally fatal.	7. Rarely, if ever, fatal.

Ætiology—It is unecessary to occupy much time in discussing the causes of pemphigus, seeing that we are almost completely in the dark with regard to its pathogenesis; indeed, our information is for the most part of a negative kind. It is not infectious, and all attempts to reproduce it by inoculation have resulted in failure: it is met with in all climates and at all seasons, at all ages, among all ranks of the community, and with equal frequency in the two sexes.* My experience would lead me to say that it is more common among the poor than among the rich, and in children than in old people, although it is more fatal in the latter.

The general health, as far as we yet know, appears to have little to do with it directly, although those who are subject to it are more liable to suffer if the health is below par, or if the diet and hygienic surroundings are defective. It seems, too, to be occasionally called into activity as the result of injuries. Sir Erasmus Wilson has recorded two cases of this kind. "In one of them, a servant girl 'poisoned' her hand with a red paste, with which she was cleaning brass; a few days afterwards a crop of bullæ, intermingled with ecchymosed spots, came out on her wrist and forearm, and continued to trouble her from time to time for seven years. The other case was that of a medical man, who punctured his right hand. Three or four weeks afterwards, an eruption of bullæ made its appearance on his left thigh, and was repeated from time to time for eighteen months. The outbreak was preceded by feverish symptoms; there was a scalded sensation in the skin, and the next morning a fully-developed bulla would be discovered." † Finally, a few instances have been recorded in which a bullous eruption has occurred in connection with each pregnancy, disappearing shortly after delivery, although it is doubtful whether these should not be classed under the head of *Herpes gestationis* (p. 291).

Treatment.—It is always important at the outset to inquire carefully into the state of the general health, and to rectify any derangement which may be discovered. This having been done, we should at once resort to the use of tonics. Of these there are only two from which, as far as I am aware, much benefit can be expected—viz., quinine and arsenic; but, in order to be effectual, they must be given in gradually increasing doses, and with an unfaltering hand, taking care, however, not to push them to the extent of producing unpleasant symptoms. In doing so we must be guided not by the amount, but by the effect of what we are giving, and, while they are often of service administered internally, they are more certainly effectual if injected subcutaneously, or both methods of administration may be combined. For subcutaneous injection, the initial dose of quinine is 2½ grains dissolved in 15 minims of water, with the aid of 2½ minims of dilute sulphuric acid; and of Fowler's solution 5 minims mixed with double the quantity of distilled water. These injections are of an irritating nature, and the needle should therefore be plunged into the cellular tissue where it is abundant, and where the parts are little sensitive, as at the hip. Before the injection the skin should be frozen, either with ether spray or with a small piece of smooth ice, the surface of which is sprinkled with a little common salt, ice being subsequently applied until all uneasiness has disappeared. The injections may be repeated once or twice in twenty-four hours. Of these two remedies the palm must be decidedly accorded to arsenic; and my experience fully corroborates that of Hutchinson, that in a large proportion of cases the disease may be arrested, although it is necessary to continue the treatment for some time after it has disappeared. It will thus be seen that I cannot agree with Hebra, who wrote that he knew "of no internal medicine which has proved efficacious against pemphigus."* Another remedy which has been recommended by Sherwell is linseed meal, and he has recorded † two cases in which cures resulted by its administration in ounce doses with milk.

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* According to Hebra, of 25 patients admitted into the General Hospital of Vienna in five years, 12 were males, and 13 females; and of 115 patients admitted into the Foundling Hospital during ten years, it occurred 57 times in male and 58 in female children. "On Diseases of the skin," by F. Hebra, M.D. *New Syd. Soc. translation*, vol. ii., p. 376.

† *On Diseases of the Skin*, by Erasmus Wilson, F.R.S. John Churchill & Sons, London, 1867. 6th Edition, p. 307.

As regards local treatment we must be careful to avoid injuring the bullæ by friction, pressure, &c., although, if tense and producing discomfort, they may be picked and the contents allowed to escape. If the parts are moist, they may be dusted with a soothing powder, of which several varieties are mentioned in connection with the treatment of eczema (see p. 168); and, if there are any excoriations, they may be dressed with pieces of linen spread with a soothing ointment (see p. 169), or protected by means of a paste of tragacanth.‡

Warm baths are occasionally of service for purposes of cleanliness, while good results have been obtained by Hebra from the use of the continuous bath. For this purpose he employed a bath 6 feet long by

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* *Loc. cit.*, p. 396.

† *Archives of Dermatology*, October, 1878.

‡ ℞ Sodæ biboratis, ... ʒss.
Tragacanth, ... ʒi.
Spt. rectificati, ... ʒij.
Glycerini (pur), ... ʒiv.
Aquæ dest., ... ℥iss. —*M.*
Sig., Smear a little over the excoriated part and allow it to dry.

3 feet broad, made of wood, and lined with copper or zinc. Exactly fitting its interior is an iron frame to which are fastened transverse bands of webbing as in an ordinary bed. At about two feet from one end of this frame is attached a head support, which moves on a hinge, and can be fixed at any angle by a simple piece of rack-work. The frame is covered with a blanket, and is also provided with a horse-hair pillow; it does not rest on fixed supports, but is suspended in the bath by cords attached to it at either end. These cords pass over two small rollers, placed one at the head, one at the foot of the apparatus, and provided with handles, so that the whole bed can easily be raised or lowered within the bath. At the head of the bath, but at a higher level, is a vessel made of copper, which can be heated, so that the water may be supplied at any required temperature. The supply pipe enters the bottom of the bath, the escape pipe opening into it at the water-level. When the apparatus is in use water is kept constantly flowing through it, so that all impurities are rapidly washed away. To enable the face to be kept coutinually wet, or to be specially irrigated, additional small tubes, each provided with a rose, are connected with the copper vessel. The tubes may also be used for the irrigation of any part of the body, the patient being in that case kept raised above the level of the water in the bath.

Before the patient is placed in the bath, it is filled with warm water, at a temperature of 90° F. to 100° F., according to his inclination. The water is also entirely changed every day.

A wooden cover, upon which a blanket is spread, is put over the lower part of the apparatus while the patient is in the bath. If he wishes the head also to be covered, this is easily managed by roofing in the head of the bath by means of hoops, upon which blankets are placed.

It is obvious that this apparatus requires continual attendance. It might be thought that there would be some danger of the patient being drowned during sleep; but this does not appear to be the case, nothing has occurred in the course of the experiments hitherto made to suggest the slightest fear of such an event.

Accurate observations written down from hour to hour, show that neither the pulse nor the respiration nor the temperature of the body has undergone any marked change in persons placed in the continual bath. There has been no loss of appetite, and the patients have continued to sleep well. The amount of urine secreted, however, has been much diminished.*

One of his patients began by remaining for a hundred days and nights uninterruptedly in the bath, with the exception of the times at which the bowels were relieved. Nine months afterwards a relapse occurred, and he then returned to the bath, and lay in it continuously through a hundred and nine days and nights. He was cured of his pemphigus.

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* "On Diseases of the Skin," by F. Hebra, M.D. *New Syd. Soc. translation*, vol. i., p. 321.

He used the continuous bath in three other cases of pemphigus. One patient remained in it seventy-six days, another forty-seven days, the third twenty-six days. By the end of these periods respectively a cure took place.

IX.—PITYRIASIS RUBRA.

Syn.—*Dermatitis exfoliativa*—*Pityriasis rubra acuta* (Devergie).

We find the first mention of this term in the work of Bateman, who thus describes the affection to which he applied it.* "This species . . . is the result of a slight inflammation of the portions of the skin affected, somewhat resembling in this respect the *psoriasis diffusa.* The cuticle is at first only red and rough, but soon becomes mealy or scurfy, and exfoliates, leaving a similar red cuticle underneath, which undergoes the like process; the scaliness becoming greater, as the exfoliation is repeated.

"This complaint is attended with a dry and unperspiring surface, a troublesome itching, and a feeling of stiffness. There is also a general langour and restlessness. When the redness and scales disappear, the patches are left of a yellowish or sallow hue. But the whole process is liable to be repeated at short intervals, and the disease to be thus greatly prolonged."

This description applies most accurately to erythema, or, if the skin is thickened and infiltrated as well, to the dry, scaly form of eczema (E. squamosum), and, therefore, does not require any other designation, so that nowadays, the term pityriasis rubra is restricted to a special form of disease first accurately described by Devergie.† This affection begins on one or several parts of the surface as a superficial inflammation of the skin without material thickening: the surface is red, the redness disappearing on pressure throughout, and soon it is the seat of fine easily detached scales, while itching may or may not be present. If seen in the early stage, and while yet localised, it is almost identical in appearance with a simple erythema, save that it has a deeper red tint, and that the edge of the patch or patches is abrupt. But the eruption generally does not long remain localised, having a tendency to spread rapidly until sooner or later it involves the whole cutaneous envelope from the crown of the head to the sole of the foot. As the disease advances the skin assumes a coarse appearance, owing to an exaggeration of the normal lines and furrows of the skin, and the redness becomes deeper, especially on the lower extremities, where, owing to their dependent position, it may be almost livid. The scales, too, are sometimes of large size—even the whole of the cuticle of the palm or sole may come off in one piece—and may be thrown off in such abundance that a pretty large basketful may be removed from the bed when the patient rises in the morning (hence the term dermatitis exfoliativa sometimes given to the disease). The nails, too, may be implicated and may exfoliate along with the epidermis. But, with all this, itching is not usually a prominent feature, and there is generally no moisture of the surface unless as the result of scratching. In some cases the patient suffers from repeated febrile attacks. The fever may even be ushered in by rigors, and the temperature run up to 103° or 104°, but usually it is an apyretic affection, although a more or less constant feeling of chilliness is a common symptom.

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* *A Practical Synopsis of Cutaneous Diseases*, by Thomas Bateman, M.D. London: Longman, Rees, Orme, Brown & Green, 1829, p. 72.

† *Traité Pratique des Maladies de la Peau.* Paris: Victor Masson. 1857. Ed. ii., p. 442.

After a variable period of time—the general health having apparently suffered little, if at all—the eruption disappears. Relapses, however, are the rule, and there may be quite a number of these spread over many years. I had some time ago, in the Western Infirmary of Glasgow, a patient, about fifty years of age, whose whole body was, and had been for eighteen months, covered with pityriasis rubra, and who, during thirty years, had about thirty attacks, although in the earlier ones the disease was localised and affected chiefly the lower extremities. In the earlier stages of the disease, as already mentioned, the general health often suffers little, if at all, but the time at last arrives when the nutrition of the body is seriously interfered with; the appetite becomes impaired, the strength gives way, there is progressive loss of flesh, so that the skin becomes wrinkled and hangs loosely about the body, the redness of the surface diminishes, giving place at last to a dirty yellowish colour, and the patient is apt to die in a state of marasmus, the fatal issue being sometimes preceded by œdema of the lower extremities and by diarrhœa.

We know very little indeed as to its *ætiology and nature.* It is generally a disease of adult life, although it may occur in old people, and even in infants when it is likely to run an acute course, and is not unfrequently fatal. A chill is very often the exciting cause, and it is, therefore, not to be surprised at that it is about one-third more frequent in males than in females. It is often a primary affection, but still more frequently it is secondary to some pre-existing affection. This is especially true of psoriasis, and I have frequently had patients suffering from that disease in a typical form, in whom the eruption suddenly extended, and became universal, all the characters of pityriasis rubra being displayed, so much so that no one could have surmised that it had originally been a psoriasis.* Indeed, Dr. Stephen Mackenzie states that this accounts for 75 per cent. of the cases of pityriasis rubra occurring after middle life.† The same gentleman has also reported five cases in which the disease seems to have supervened upon attacks of eczema. Devergie, on the other hand, has reported cases‡ in which pityriasis rubra became complicated with the development of bullæ—where, to use his own expression, pityriasis has become transformed into pemphigus.

Diagnosis.—In the early stage, when the eruption is localised, it can only be distinguished from simple erythema by the abruptness of the edges and the deeper tint of the patches. When fully developed its relapsing character, its universal distribution, the deep redness of the surface, the free desquamation, and the absence of decided infiltration, of excessive itching and of moisture (unless there is much itching and the patient indulges in scratching) are very characteristic features.

The following table gives the points which distinguish it from eczema:—

Pityriasis rubra.	Eczema.
1. Redness of a deep tint, and may even be livid on lower extremities.	1. Redness usually of a rosy tint.
2. Edge of eruption abrupt.	2. Redness gradually shades off into the colour of the healthy skin.
3. Itching, if present, usually moderate.	3. Itching a much more prominent symptom.
4. Eruption dry throughout, unless as result of scratching.	4. Moisture and crusting a much more constant and prominent feature.
5. Redness of surface uniform.	5. Red surface often studded with innumerable dots of a deeper red—*i.e.*, surface punctated.
6. Desquamation a very prominent feature, and scales easily detached.	6. Desquamation not such a marked feature, and scales much more adherent.

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* See case published by the author in *Brit. Med. Journ.*, Dec. 8, 1877, p. 82.

† *The Brit. Journ. of Dermatology*, July, 1889, p. 288.

‡ *Op. cit.*, pp. 447 and 448.

7. Has a tendency sooner or later to involve the whole of the cutaneous envelope.	7. Is rarely universal.
8. Relapses the rule, and one of these not unfrequently proves fatal.	8. Relapses not so constant, and disease never fatal.
9. Ætiology obscure.	9. Generally some of usual causes of eczema discovered (see ætiology of eczema).

(For the diagnosis of pityriasis rubra from lichen ruber, see the latter disease.)

Treatment.—In all cases we must pay careful attention to the general health, and rectify, if possible, any co-existing derangement. In acute cases, and in the early stages, the diet should be light, and saline aperients may be of service, or, if the kidneys are inactive, diuretics, especially alkaline diuretics. In every stage of the disease warm or vapour baths two or three times a week are to be recommended, and in the intervals the surface should be kept anointed with mild unctuous applications, such as camphorated oil, a mixture of vaseline and glycerine in the proportion of 3 parts of the former to 1 of the latter, or one of the soothing ointments mentioned under the head of eczema (see p. 169). In the more chronic forms of the disease, ointments containing tar or oil of cade may prove of service, especially where itching is a troublesome symptom.* In these chronic cases, if there is no fever, and if the functions of the digestive system and kidneys are in a satisfactory state, arsenic is the remedy *par excellence*, but it generally requires to be pushed, beginning with ordinary medicinal doses, and gradually increasing either until the disease begins to yield or until the medicine shows signs of disagreeing. We must be guided in fact in these cases not by the dose but by the effect of what we administer, and, if the patient is confined to bed and not exposed to cold, large doses may often be given with impunity and with benefit.

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* ℞ Zinci carbonatis (pur), ... ʒiv.
Glycerini,
Olei cadini, āā, ... ℥i.
Cerati galeni, ad . . . . ℥viij. —*M.*

Sig., Rub firmly into the affected surface night and morning, or oftener if itching is present.

X. DERMATITIS EXFOLIATIVA EPIDEMICA.

By Thomas D. Savill, M.D.

Syn.—*General Epidemic Exfoliative Dermatitis; Epidemic Exfoliative Dermatitis; Epidemic skin disease.*

History.—In the summer of 1891, the writer drew attention,[*] under the above title, to a contagious exfoliative disease of the skin which was liable to be confused with acute general eczema or with pityriasis rubra. But the cases were shown to differ from each of these diseases in their clinical features. From the former they differed in the presence of epidermal exfoliation and other characters, and from the latter in their definite course and duration. The disease was also proved beyond doubt to be contagious, and the presence of a microbe was demonstrated.[†]

One hundred and sixty-three cases occurred at the Paddington Infirmary in the year 1891 under the writer's care, a still larger number in the Marylebone Infirmary,[‡] some also in the Hanwell Asylum,[§] St. Mary's Hospital,[||] and elsewhere, all during that year. It was also found, on subsequent inquiry,[¶] that cases, probably of the same nature, had formerly occurred in the Greenock Parochial Asylum (1888), and other places, where the disease had been, at the time, classed as an eczema, albeit of a very fatal kind. Since the year 1891 many sporadic cases have been observed, and in the summer of 1893 an epidemic of about 80 cases broke out in the sick wards of the Workhouse at Bethnal Green. In all these later instances the disease was of a milder type than the first described case at Paddington.

Description.—The malady may be defined as "a contagious disease in which the main lesion is a papular dermatitis, sometimes attended by the formation of vesicles; always resulting in desquamation of the cuticle; usually accompanied by a certain amount of constitutional disturbance, and running a more or less definite course of seven or eight weeks."

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[*] *Lancet*, August 1, 1891; *Brit. Med. Journ.*, Dec. 5, 1891, and Jan. 9, 1892; *Med. Soc. Trans.*, vol. xv., Nov. 30, 1891; *Brit. Journ. of Dermatology*, Jan. and Feb., 1892; and *Epidemic Skin Disease*, a monograph, published by H. K. Lewis, London, 1892.

[†] Savill, *Brit. Med. Journ.*, Jan., 1892, and *Brit. Journ. of Dermatology*, Feb., 1892; and Russell, *Brit. Journ. of Dermatology*, March, 1892.

[‡] Lunn, *Med. Soc. Trans.*, vol. xv., p. 125.

[§] Richards, *Med. Soc. Trans.*, vol. xv., p. 126.

[||] Lees, *Lancet*, Aug. 22, 1891.

[¶] Hutchinson, *Arch. of Surg.*, Jan., 1892, and Elkins, *Med. Press. and Circ.*, April 5, 1893.

In severe cases the whole body is attacked, though in milder cases only a limited extent of surface is involved. It may start on any part of the body. The skin lesion commences usually as a bright red papular rash, often arranged in small more or less circular groups like constellations of stars. Often it starts as a papulo-erythematous condition; and occasionally in slightly raised maculæ. But in all cases, in the course of a day or two, the elements become fused, and result (2nd stage) in a bright red surface, exfoliating its epidermis, and covered more or less with moist or dried exudation. Vesicles may form in some places, but are not always visible owing to their early rupture. There is generally some tendency to exudation in the flexures; but for the most part dry desquamation with erythema are the more common conditions. In acute cases, and where the cellular tissue is loose, there is sometimes considerable swelling; and in nearly all cases there is some thickening of the skin. Two types of the disease have been distinguished roughly by the amount of exudation; the *moist* variety (Dermatitis humida) mistaken for eczema, and the *dry* (Dermatitis sicca) resembling pityriasis rubra.

For the next few weeks the disease runs a more chronic course, and the skin throws off large quantities of epidermal flakes and crusts. This exfoliation is the diagnostic feature of the disease, and in severe cases it is very profuse; pints of flakes may be collected in twenty-four hours. At the end of some four or five weeks the inflammation gradually subsides, leaving the skin still rather thickened, but with a polished, stretched appearance.

The course of the disease is not always quite regular at the commencement, when it may fade partially away, and subsequently take on renewed action. The duration of the disease is fairly definite, and averages seven or eight weeks. Relapses occurred in a quarter of the cases.

The disease varies somewhat in severity. Some are very slight, usually in younger subjects, and the rash is then of more limited extent. In severer cases the hair and nails share in the general exfoliation. In a fair proportion of the cases seen during the past two years, especially those occurring in the young, the first or inflammatory stage has not gone beyond a few scattered groups of papules or patches of erythema, unattended by any constitutional signs, or any visible exudation. But, however slight this case may be, the succeeding desquamation of the epidermis is unmistakable and always present.

Reference may, with advantage, be made to a sporadic case which the writer saw in 1891,* and which is of sufficient interest to quote:

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* *Brit. Med. Journ.*, Jan. 9, 1892, footnote, p. 56.

—A little girl, aged eight, had developed, three weeks before, a pimply redness of the face and head, which soon became scaly. The rash spread on successive days to other parts of the body, so that at the end of a week all but the legs below the knees had been affected; lastly, these and the feet were involved. The epidermis of the body generally was exfoliated in flakes and scales, that of the hands and feet in pieces measuring an inch or more. Large pieces were coming off the feet at the time she was seen. Nothing but scarlatina could have produced such an exfoliation, and this was negatived by the slow march of the rash, the total absence of pyrexia, sore throat, characteristic tongue, or contagion to a large family of brothers and sisters. There had been some thirst, but no history of anorexia, nor of other constitutional symptoms in this case, and the patient suffered only trifling discomfort. The eyes had been a little sore at one time. She made a good recovery in about seven or eight weeks time. There was no history of contagion in this case.

Constitutional Symptoms and Prognosis.—The temperature is only very rarely elevated, and in such cases it is nearly always due to boils or some intercurrent malady. But the patients generally complain of weakness and prostration, loss of appetite, and thirst. The prostration in severe cases is very marked, and seems to be the cause of death in the fatal cases. In debilitated and elderly subjects the malady often assumes serious proportions, and among the Paddington cases there was a death-rate of 12·8 per cent. In mild cases and young subjects constitutional symptoms may be absent.

The most unfavourable symptoms are embarrassed respiration and muscular twitchings, and then the patient becomes very prostrate and drowsy, passing gradually into a typhoid condition.

Complications.—The conjunctivæ are generally affected in some degree, sometimes severely. The mucous membrane of the alimentary canal is very liable to become affected; the tongue is white and furred, and sometimes diarrhœa and vomiting occur; there may also be albuminuria. Boils are apt to occur during the course of the disease, and afterwards.

Diagnosis.—The distinctive feature of the disease is the marked shedding of the cuticle, even in the mildest cases. Generally this is in small bran-like flakes, but occasionally whole casts, as may be seen in the Hunterian Museum, of the fingers or toes are shed.

I. The malady, when first observed by the writer, was mistaken by him for *acute general eczema*, and the moist variety undoubtedly resembles this disease in some respects, but the points of distinction are set forth below in a tabular form:—

Eczema.	Dermatitis exfoliativa epidemica.
1. Attacks all ages, and children are very liable.	1. Children are almost exempt, and old people especially prone.
2. Gout is a marked predisposing cause.	2. Gout offers no predisposition.
3. Constitutional disturbance always moderate, and never fatal.	3. Constitutional disturbance often severe, and may be fatal.
4. Dried crusts thrown off, but exfoliation of cuticle not a marked feature of the disease. Dermal thickening absent or moderate.	4. Epidermal exfoliation a constant feature, often very profuse. Dermal thickening generally present, often marked.
5. Course not definite.	5. Course fairly definite.
6. Not regarded as contagious.	6. Undoubtedly contagious under certain conditions.

II. The dryer variety of cases resembles *pityriasis rubra.* Indeed, without knowing the history, some cases are in appearance almost identical. The points of distinction are :—

1. The contagious nature of the malady under consideration.
2. Its definite course.
3. Some of the cases during an epidemic are attended by profuse exudation.

On the other hand, pityriasis rubra is not contagious, of chronic course and indefinite duration, and occurs at all periods of life.

III. Some of the acute cases, when attended with much tumefaction, resemble erysipelas, but the more gradual advent, the absence of pyrexia, and of margination to the redness, and the presence of exudation in some cases, distinguish the disease from acute erysipelas.

IV. Rötheln, scarlatina, and other maladies may be distinguished by the more gradual advent, the profuse exfoliation, the absence of pyrexia, and the different course pursued by the disease in question.

Ætiology.—There seems to be a very marked predisposition for the affection to attack persons of middle and, still more, advanced age. Seventy-nine per cent. of the Paddington cases were over fifty years old. Cases of children are recorded, but they are few in number. Amongst the other predisposing causes may be mentioned the male sex, debility, and the late summer and autumnal periods of the year.

The disease may, as we have seen, occur sporadically, but most of the recorded cases have had an epidemic relation. Those under the writer's care were undoubtedly contagious, and due to the presence of a specific microbe, and the disease spread through the wards of two large buildings.* The malady, however, seems to be contagious only under certain conditions. What these conditions are is not yet fully known. The infecting distance is probably short, even if actual contact be not necessary. A certain concentration of the poison at one time, and in one place, would seem also to be necessary.

Nosology.—The disease is clinically related more nearly to exfoliative dermatitis than any other. The name originally suggested for it was "general exfoliative epidemic dermatitis." But the eruption is by no means always general. Moreover, in slight cases, the skin lesion is hardly severe enough to be called a dermatitis.

On the other hand, it is the only skin disease which, up to the present time, has been connected with epidemic causes, and, therefore, the appellation epidemic skin disease would seem to be a sufficiently accurate and distinctive designation, though it must never be forgotten that this, like other epidemic disorders, *may occur sporadically.*

Treatment.—If seen in an early stage, the liberal employment of antiseptics is undoubtedly efficacious in cutting short the malady. Creolin is especially good, used as a 1 to 5 per cent. ointment with lanolin, or as a warm bath daily (2½ pints of a 1 per cent. solution of creolin to 15 gallons of warm water). The latter is also very useful in allaying the irritation. Resorcin, ichthyol, and other soaps have been tried without effect. Bland emollient ointments are called for to relieve the itching.

In slight cases little else is needed. The disease undergoes spontaneous cure in the course of a few weeks. But the severer form, such as occurs in the aged, requires constant attention, careful nursing, and the liberal administration of easily assimilated food and stimulants. In these cases the condition of the patient is indeed a most unhappy one, and taxes all the resources of our art.

XI. PITYRIASIS RUBRA PILARIS.

Syn.—*Pityriasis pilaris* (Devergie); *Pityriasis rubra pilaire; Pityriasis rubra folliculaire* (Besnier).

There can be little doubt that this is an independent affection, but many hold, with Kaposi, that it is identical with Hebra's lichen ruber. It is closely allied to psoriasis, for which it is very apt to be mistaken, although such a thing as the transmutation of the one into the other is never observed. It must not be confused with lichen pilaris, which is sometimes also described under the name of pityriasis pilaris.

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* Subsequent bacteriological researches have shown that it is difficult to obtain pure cultures of the characteristic diplococcus, by reason of its contamination with staphylococcus pyogenes albus and S. P. aureus, and because it appears only to be present in quantity at certain stages, probably the early ones, of the malady (T. S.)

We are almost completely in the dark with regard to its etiology and nature, for to say, with Boeck, that it results from trophic disturbance, is little more than a cloak to hide our ignorance of its pathology. It is much more common in males than in females, in the proportion of at least two to one, and, while it may set in at any period of life, it generally commences before the age of twenty-one. Of twenty-five cases collected by Besnier,[*] seven began during the first ten years of life, and eleven between ten and twenty-one; and of the former, three occurred at four, fourteen, and twenty-eight months. The seasons do not seem to exercise any special influence over it.

Rayer [†] was the first to record a case of this disease under the title of "*Psoriasis général; apparence particulière de la desquamation sur les points occupés par les poils;*" but Devergie [‡] was the first to describe it as a separate affection under the name of "Pityriasis pilaris."

Symptoms.—The disease, which is symmetrical, often commences on, and for some time may be limited to, the palms, although the first appearances may be observed upon very varying localities. A red, itchy spot is observed upon the palm, which rapidly spreads until it involves the whole of it, including the flexor surfaces of the fingers, thus differing from psoriasis palmaris, which is generally limited to the centre of the palm and makes very slow progress (Devergie). By and by the affected parts are covered with thick, hard, epidermic masses and fissures, especially at the flexures of the joints, and which are often painful and bleed. The hyperæmic corium, shining through the thickened epidermis, gives to the surface a yellowish colour. In the most advanced stage the palms are dry and parchment-like, the interpapillary furrows are effaced, and the exfoliation of the epidermis takes place in lamellæ of varying dimensions (Besnier). Similar manifestations are frequently observed, simultaneously or somewhat later, on the soles of the feet.

The head is generally implicated from the first, or, at all events, early in the disease. The scalp is more or less reddened, and the surface covered with farinaceous scales which fall in abundance upon the clothing just as in an ordinary case of pityriasis capitis, while in other cases it is covered with a thick chalky sebaceo-squamous layer which conceals the underlying hyperæmic surface. The frequent commencement of the disease on the palms and head was noted by Devergie, who remarked that, in the four cases observed by him, pityriasis pilaris was always *preceded* by "psoriasis palmaria" and "pityriasis capitis," supposing that they were distinct and independent affections, and not constituting features of the disease in question. In some cases, the face, neck, and ears, or some of the hairy portions of the face only, as the eyebrows, are affected in a similar way, and sometimes before the head is attacked.

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[*] See his excellent pamphlet *Observations pour servir a l'histoire clinique du Pityriasis rubra pilaire.* G. Masson. Paris, 1889.

[†] *Traité Theorique et Pratique des Maladies de la Peau.* Paris, 1835, t. ii., p. 158.

[‡] *Traité Pratique des Maladies de la Peau.* Ed. ii., p. 454. Paris, 1857.

From the head and face the disease tends to spread downwards to the trunk and extremities, and it is upon these parts, especially, that the typical features of the disease are observed, and which justifies the title of pityriasis pilaris.

Groups of epidermic papules, about the size of pin-heads, and somewhat resembling psoriasis punctata, make their appearance at the orifices of the hair follicles, and on passing the hand over the affected part it feels like a rasp. They are *specially* apt to occur where the lanugo-hairs are most developed, as on the backs of the fingers, hands, and forearms, but they may be observed on any part of the body except on the hairy parts (head, &c.) and on the palms and soles, when the eruption presents the characters above described.

On removing these epidermic papules with the aid of a pin, they are found to result from a remarkable and characteristic change in the root-sheaths of the lanugo-hairs, although there is a difference of opinion as to whether the inner or the outer root-sheath is most at fault. Each consists of a hard horny concentrically arranged cone of epidermis, the apex of which is in the hair follicle, while the base projects above the level of the skin (Fig. 14, p. 312). It embraces, imprisons, and strangles the hair, so that it breaks off short.

The epidermic cones are quite distinct from one another and of equal size, the intervening skin being at first healthy, or nearly so, but by and by hyperæmic redness makes its appearance around the follicular orifices, and soon spreads to the intervening skin. At last the whole surface is involved, and being more or less covered with scales, which are easily detached, recalls the appearance of psoriasis, although, even at this stage, the epidermic cones can sometimes still be made out. When the eruption is at its height it not uncommonly involves the whole cutaneous envelope.

The nails rarely, if ever, escape, and are often affected from the first, even before the skin trouble sets in. The nail grows quickly and unequally, loses its transparency, is furrowed and variously deformed. It is also thickened, there being a hyperplasia of the bed of the nail, especially at its free edge, and it is often painful, especially if pressed upon.

This disease does not, as a rule, seriously interfere with the general health, although there may be some emaciation, and sleep may be interfered with when the irritation is exceptionally severe. The femoral and inguinal glands are often enlarged. The onset of the complaint may be acute or chronic, but, after it is fully developed, it may remain pretty stationary for months, or, with incomplete intermissions, even for years, and, when recovery takes place, it is not always the parts first attacked which improve soonest; indeed, not unfrequently, the trunk of the body recovers before the face and extremities. Relapses are the rule.

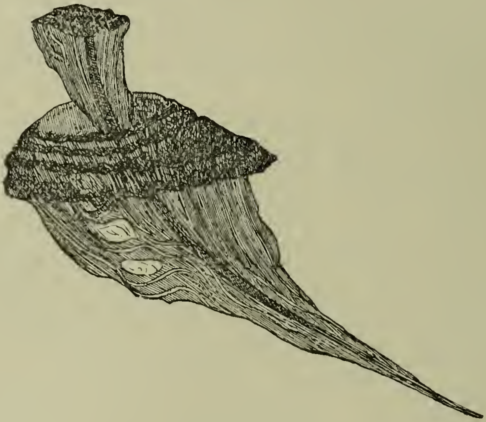

Fig. 14.

Diagnosis.—The diseases most liable to be mistaken for pityriasis pilaris are psoriasis and pityriasis rubra. Psoriasis has a very close superficial resemblance to pityriasis pilaris, especially when the latter is confluent, and is pretty sure to be mistaken for it by those who are not familiar with the appearances which it presents. Pityriasis rubra can only be mistaken for pityriasis pilaris, by the careless or unskilled observer, and when the latter is universal. The following table may help to prevent errors of diagnosis:—

Pityriasis pilaris.	Psoriasis.
1. Not hereditary, and not relapsing at any *special* time.	1. Hereditary, and special tendency to relapse in spring or autumn.
2. Initial lesion epidermic cones springing from root-sheaths of the hairs, which can be readily picked out without bleeding.	2. Epidermic papules rest on inflamed base, do not penetrate into hair follicles, and on removing them bleeding apt to ensue.

3. Papules do not increase in size.	3. Papules increase in size, and tend to form round patches, healing in centres and spreading at edges.
4. No special tendency to attack extensor surfaces of elbows and knees, but often commences on palms, soles, and head.	4. Special tendency to attack extensor surfaces of elbows and knees.
5. When scales removed from patches skin rosy, but not infiltrated.	5. When scales removed from patches skin *dusky* red, and more or less thickened and infiltrated.
6. When palms implicated, entire flexor surfaces, including those of fingers, *rapidly* involved.	6. The centres of the palms most commonly attacked, and extension very slow.

Pityriasis pilaris.	Pityriasis rubra.
1. Generally commences before the age of twenty-one.	1. Most commonly sets in after middle life.
2. Very often commences on palms, soles, and head.	2. No tendency to commence on these parts.
3. Elementary lesion epidermic cones at orifices of the follicles.	3. Starts as an erythematous redness.
4. Redness of the skin—which is rosy red—is a secondary phenomenon.	4. Redness from the first, and dusky-red, especially on lower extremities.
5. Bullæ never form.	5. Occasionally complicated with development of bullæ.
6. Nails affected.	6. Not generally affected.
7. A benign affection.	7. Sooner or later undermines health, and patient apt to die in state of marasmus unless checked by treatment.

Treatment.—This must follow the lines to be observed in the treatment of psoriasis, but there can be no doubt that arsenic in full and increasing doses, and subcutaneously if necessary, is our sheet anchor. Amongst outward applications Besnier specially recommends pyrogallic acid, and Boeck, Unna's ointment, composed of 1 part perchloride of mercury, 16 carbolic acid, and 500 benzoated zinc ointment.

XII. LICHEN RUBER.

Of this disease two varieties have to be considered—viz., the localised and the generalised.

1. Localised Lichen ruber (*Lichen ruber planus*).—We are indebted to Sir Erasmus Wilson, who gave to it the name of *Lichen planus*, for the separation of this from other forms of lichen. The eruption, which is by no means a rare one, appears in the form of little papules, from one to three lines in diameter, which are mostly triangular or quadrangular in outline, and which rise abruptly from the skin to the extent of about a line. They have a dull red or even a purplish colour, and a typically characteristic feature is that their summits are smooth, shining, and flat, or slightly umbilicated, while in the centre of each the orifice of the follicle around which it forms is generally to be discovered. These papules may increase in size until their diameter may equal that of a split-pea, and new ones form from time to time, so that at last they coalesce into patches of varying shape and form, having the appearance of elevated, flat, dull-red or purplish infiltrations, in which the papular element can no longer be detected. Around them isolated papules are always to be seen. These patches are sometimes covered with fine thin scales, and are generally the seat of a varying amount of irritation, the itching, however, being rarely such a prominent feature as in many other diseases, such as eczema.

There is never any exudation on the surface, the rash being dry throughout, and, when it fades, deep brownish stains are generally left for a time, which gradually disappear; but there is never any destruction of the skin, and therefore cicatrices are never observed. Its course is alway chronic, often very much so, and it may continue nearly unchanged for months on end. It is generally symmetrical, and may occur on any part of the body; but the extremities are more frequently attacked than the trunk, the most favourite seats of all being the anterior aspect of the forearms and the wrists. The mucous membrane of the mouth is sometimes involved.

It may occur at all periods of life, although it is not common in children, and is most frequently observed about middle age. Males and females are probably equally liable to it—although upon this point there is some difference of opinion—and it is often associated with digestive derangement and, above all, with nervous debility, the result of overwork, anxiety, or depression. It is by no means uncommon in this country and in America, while the generalised form seems to have its special habitat in the Austro-Hungarian empire.

If the characters above mentioned are borne in mind, it is all but impossible to mistake lichen planus for any other disease, so that it is unnecessary further to insist upon its diagnostic marks. It is rather an obstinate affection, but usually yields, within a few months at furthest, to carefully directed treatment.

2. **Generalised Lichen ruber** (*Lichen ruber* (Hebra), *Lichen ruber acuminatus*).—This variety is but seldom met with in this country or

in America, but it is by no means so rare in Austria, if we may judge from the published writings of Hebra, to whom we are indebted for the first accurate delineation of it, as well as for the title of lichen ruber, by which it is now universally known. The following, according to that observer, are its main characteristics:—

It commences pretty much in the same way as the localised form, but the papules, which are crowned with fine, adherent, white scales, are conical* (hence the name lichen ruber acuminatus). They never increase in size, but rapidly in number, and become closely aggregated. Soon they coalesce, forming patches of varying size and shape, and sooner or later, the whole surface of the body is apt to be involved. At this stage the papular character is completely lost; the skin has a dull red colour, is covered with thin paper-like, greyish, not very adherent, scales, on removing which the orifices of the hair follicles are found to be dilated. It is the seat of much itching, but not to such an extent that the scratching produces excoriations, and the infiltration is so decided that, on pinching up a fold of skin, it is found to be more than twice the normal thickness, the parts most thickened being the palms of the hands, the soles of the feet, the fingers, and the toes. The movements of the joints are thus much interfered with and are apt to be kept in a state of semiflexion, while fissures generally form over them which often bleed and are a source of much discomfort.

Sooner or later the finger and toe nails invariably suffer. "Sometimes there is an increased growth of nail-substance from the bed of the nail, so that this acquires more than twice its natural thickness, while it at the same time becomes rough, opaque, of a yellowish-brown colour, and very brittle, so that it does not grow to its usual length, but breaks off before it has reached the tip of the finger. In other instances, again, its growth proceeds from the matrix only, and not from the whole of its bed, so that it forms a mere thin, brittle, horny plate, which is of a lighter colour than natural, and projects more or less away from the finger. In either case, the change in the nails, added to the infiltration of the skin itself, interferes greatly with the fingers and toes, so that the power of walking and that of grasping objects are very much impaired."†

The hair of the head, axillæ, and pubis is unaffected, while on other parts it is unusually fine and downy. When the disease occupies extensive surfaces, and above all when it is universal, the general health at last suffers: the patient loses flesh and strength, and is apt to die at length—it may be after years—in a state of marasmus. Many dermatologists—and my own experience is in accordance with theirs—entertain serious doubts as to lichen ruber planus and acuminatus being varieties of one and the same affection. In particular, Dr. A. R. Robinson is of opinion that there is no relationship between the factors producing the eruptions in these two forms of disease. He holds that, in lichen planus, the lesions are due to a circumscribed inflammation of the papillæ and upper part of the corium, and that any changes observed in the rete or corneous layer are secondary to the changed nutritive conditions, the result of the inflammatory process. In lichen ruber, on the other hand, the primary and principal changes occur in the shape of hypertrophy of the corneous layer of the epidermis from a continuous collection of epidermic cells, the result of an anomaly in the process of their production and casting off; and these cells, by pressure upon the underlying cutis, cause dilatation of the blood-vessels of the papillæ, which are surrounded by a variable number of emigrated corpuscles.*

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* The difference in the shape of the papules in the two varieties depends, according to Dr. Radcliffe Crocker, on their being seated at the sweat pores in the first variety, and at the hair follicles in this.

† "On Diseases of the Skin," by F. Hebra, M.D. *New Syd. Soc. translation*, vol. ii., p. 59. London, 1868.

Further, there are many who hold that Devergie's pityriasis rubra pilaris (p. 309) and Hebra's lichen ruber are identical affections. This is the opinion of Kaposi, while Hebra Jr., Neumann, and French dermatologists generally consider them to be distinct. All that I can say is, that if pityriasis rubra pilaris is distinct from Hebra's lichen ruber, I have never seen the latter affection.

Diagnosis.—The diseases which may be mistaken for generalised lichen ruber are eczema, psoriasis, pityriasis rubra, and syphilis.

Eczema lichenoïdes—the papular form of eczema—is the only one with regard to which error may arise; but in it the papules are larger and more prominent, the infiltrated patches have a brighter red tint, are much more itchy, so that excoriations are frequently observed, and exudation or leeting is a common occurrence, leading to the formation of crusts. This affection may be extensive; but it does not involve the whole cutaneous envelope: it is much more amenable to treatment, and never terminates fatally.

Psoriasis cannot readily be mistaken for lichen ruber; it is often very extensive, but rarely involves the *whole* surface; it has a special tendency to commence on the extensor surfaces of the elbows and knees, and next to this the head; the papular character is not observed, or at all events the little elevations indicating the commencing eruption do not present the peculiar characteristics of the lichen ruber papules as above described; the scales constitute a much more prominent feature as a rule, and are generally thick, silvery, and imbricated, and, when torn off, bleeding points are sometimes observed. The eruption does not interfere with the general health, which is often remarkably good, and it never terminates fatally, although it is frequently somewhat obstinate and has a special tendency to relapse, particularly in the winter and spring: it is distinctly a hereditary affection.

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* *Journ. of Cut. and Genito-Urinary Diseases*, Jan., Feb., and Mar., 1889.

Pityriasis rubra is much more likely to be mistaken for lichen ruber by the uninitiated, because it has a tendency to be universal; but the colour of the eruption is generally brighter, at least it is never violet; the elementary lesion is not a papule but an erythema; there is not so much infiltration of the skin, so that, on pinching up a fold, it is not much thicker than the normal; and occasionally the skin peels off in very large flakes, so that there should be little difficulty in the diagnosis.

Syphilitic eruptions, when the lesion is papular, might be mistaken for lichen ruber by the careless observer, but the eruption is never by any chance universal nor even very confluent; the papules are larger and have none of the peculiar characteristics of those of the other affection; they are often grouped in circles or segments of circles, and sometimes suppurate on their summits, while they are altogether void of irritation; they are often associated with other syphilitic eruptions, such as condylomata at the anus or vulva, the so-called psoriasis syphilitica, &c. Other manifestations of syphilis are frequently present, such as falling out of the hair, superficial symmetrical ulceration of the tonsils or lips, enlargement of the posterior cervical glands, nocturnal rheumatism, or headache, &c.; and, finally, a history of the contraction of syphilis not many months before can often be obtained.

The **treatment** of the localised form—the lichen planus of Wilson—demands attention to the general health, especially to the state of the digestive organs and nervous system. When this has been done, our sheet anchor is arsenic, the rules for the administration of which have been already given under the head of eczema. Alkalies are much in favour with some, and Robinson states that, in rheumatic subjects, he has seen the eruption disappear in a couple of weeks under iodide of potassium and colchicum. As local applications, we may employ the same class of preparations as have been found useful in the treatment of chronic eczema, amongst which some of the lotions and ointments containing tarry preparations are to be specially recommended. Wilson advises the employment of a lotion of the perchloride of mercury—which may be used in the proportion of 2 grains to the ounce—or of a solution of the pentesulphide of calcium.[*] Dr. P. G. Unna, of

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[*] ℞ Calcis vivi, ... ℥i.
Sulphuris sublimati, ... ℥v.
Aquæ fontanæ, ... ℥xx. —*M.*
Boil for half an hour and filter; making the quantity of fluid product 10 ounces.

Hamburg, speaks highly—and justly so—of "sublimate carbolic acid ointment," which is composed of ung. zinci. benz., 500 parts; acid carbol., 20 parts; sublimate, 1 part; and with which the patient, who is kept in bed, is thoroughly anointed night and morning.

In the treatment of the generalised form of Hebra, the only remedy from which permanent success has been obtained is arsenic; but, before it is employed, any special derangement of the general health must be corrected on general principles. In order to be effectual, however, it is almost invariably necessary to push the medicine, which can be done most safely when the patient is confined to the house so as to avoid exposure to cold; and often we can best attain our object by combining its internal administration with subcutaneous injections.

Professor Kaposi has published a case * which I had the opportunity of seeing when in Vienna (Sept., 1887), under the title of lichen ruber moniliformis, which is almost unique.† The patient was forty-five years of age, and, though imperfectly nourished, was otherwise in good health. He could not give an accurate history of the onset and progress of the complaint, but stated that it was of fifteen years duration, and had long presented the same characters as on admission. The skin affection was symmetrical and very extensive, the parts most affected being the neck, the extremities (especially the flexor surfaces of the elbows and knees, and the parts in the vicinity of the shoulders and hips), the abdomen, hips, and scrotum. There was no eruption on the face, nor below the upper third of the forearms or legs. The affected parts, which were sensitive to pressure, but not itchy, were the seats of long streaks and bands which had a beaded character. They were, for the most part, though not exclusively, nearly vertical in direction, were very fine and thread-like at their origin, but became rapidly thicker until their centres were reached, when the beads formed little tumours, even as large, at some places, as small cherries. They were yellowish-red in colour, were glistening, and very dense and firm. They had much the appearance of coral necklaces, and on first looking at them, the idea of a spurious keloid condition at once suggested itself, but the microscopic examination showed that there was no new formation of connective tissue, but that the subpapillary layer of the corium was densely infiltrated with cells.

In addition to the cords and bands, and for the most part in the vicinity of, or between them, numerous little papules, and pigmentary stains where they had been, and identical with those of lichen ruber, were abundantly present. Kaposi is of opinion that the disease is

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* *Vierteljahresschrift für Dermatologie und Syphilis*, 1886, and *Atlas der Hautkrankheiten*, Taf. xxix. Wien, Wilhelm Braumüller, 1890.

† At the Buda-Pesth Medical Society, Rona has reported a similar case.

essentially of the nature of lichen ruber, the beads entering into the formation of the bands being, in fact, enormously hypertrophied lichen papules. It is impossible to convey in words an accurate idea of this case, but a very good illustration of it accompanies Kaposi's paper. The patient improved considerably under subcutaneous injections of arsenic.

XIII. ACNE.

Syn.—*Acne disseminata ; A. vulgaris ; Varus.*

The term acne should be limited to an inflammation of the sebaceous follicles and glands, the result of accumulation and retention in them of sebaceous matter: this was supposed to take place at the *acme* of the system, hence the word acne, the letter *n* having been, according to Dr. Greenhill, originally inserted by Ætius in mistake for *m*. So long as there is simply retention of sebaceous matter in the follicles, the surface being more or less extensively studded with black specks situated at the orifices of the sebaceous follicles, we have to deal with that disorder described among the functional affections of the sebaceous glands under the name of comedones (see p. 70). This condition may continue for an indefinite period without giving rise to irritation; but these sebum plugs must be regarded in the light of foreign bodies—as thorns in the flesh—which very readily excite inflammation and suppuration in the surrounding tissues, and then the patient is said to be labouring under acne. And if we are asked why inflammation ensues in some cases and not in others, we can only reply that it is likely to arise in the case of those whose skins are sensitive, or whose general health is disordered, or whose constitutions are unhealthy, for undoubtedly the eruption is apt to appear in its most aggravated form in the subjects of the lymphatic diathesis and in those who are strumous: this latter point must, therefore, be kept in view with reference to treatment.

Acne is unfortunately a very frequent affection: it occurred 853 times in 38,054 of my hospital cases, and with even greater relative frequency in private practice (122 times in 2,000 consecutive cases), the disfigurement resulting from it being more resented by the upper classes. It is much more commonly met with in females than in males (of 68 cases occurring among 1,000 consecutive cases of skin disease in private practice, 22 were in males and 46 in females), at least they form a much larger contingent of patients, and that for obvious reasons. It is rarely if ever met with before puberty, most cases commencing between the ages of fifteen and twenty-five, although it may continue for many years thereafter, with diminishing intensity as years pass by. The time of life at which it tends to appear has led to the belief that there is some connection between acne and the organs of generation, an opinion which is supported by the fact that marriage and the exercise of the generative functions seem to have some influence in at least moderating its violence, and that Professor Rigler—who lived for many years in Constantinople, and especially inquired into the point—very rarely saw acne in eunuchs, although it is a very common complaint in the East.* It is right to mention, however, that this view is opposed to Hebra's experience, who wrote—"I cannot . . . agree with Plenck's dictum, 'Matrimonium varos curat,' but would rather say, 'Tempus varos curat;' for, in course of time, this inflammation of the sebaceous glands and hair follicles, which occurs most about puberty, will reach its end, and that just as surely with bachelors and vestals as with married people." †

Symptoms.—Any portion of the skin which is provided with sebaceous follicles may be the seat of acne, but the parts most frequently involved are the face and upper part of the neck, the shoulders and back, and the upper part of the front of the chest, and it is not uncommon for all of them to be attacked. The starting point of the eruption is the accumulation of hardened plugs of sebum in the sebaceous follicles (comedones), which are black upon the surface owing to admixture with particles of dirt. Around these inflammation is induced, which varies in character at different points and in different persons; sometimes a small nodule (papule) surrounds each (acne punctata); sometimes the papule becomes pustular on the surface or the inflammation is pustular from the first (acne pustulosa); sometimes there is a decided induration or tubercle (acne indurata); but, whatever the character of the inflammatory lesion may be, a characteristic black speck (the dilated and plugged up orifice of the sebaceous follicle) is generally to be seen in the centre of each. If one of these inflammatory centres is touched with a lancet, and pressure subsequently applied, the plug of sebaceous matter is extruded, having a superficial resemblance to a small worm, and often, along with it, more or less pus. In severe cases, especially in strumous subjects, some of the sebaceous glands are apt to be the seats of distinct abscesses, which form little tumours situated in the corium and subcutaneous cellular tissue, the skin covering them having sometimes a normal colour, but oftener being reddish, violet, or livid. If these inflammatory centres are allowed to run their course unchecked, they leave cicatrices which resemble the pits of small-pox, and, as the eruption tends to occur in successive crops, spread over a lengthened period, although each individual scar may be minute, the ultimate disfigurement may be very considerable: this furnishes an unanswerable argument against the advice, so cruelly given by some practitioners, to let the disease alone as it will disappear in process of time. Finally, the affected surface has often an oily appearance, owing to its being coincidently the seat of seborrhœa fluida (see p. 78). The fully developed disease produces much deformity and is very characteristic: the affected surface is studded over with black specks (comedones), papules, pustules, tubercles, or even abscesses, and intermingled with them are minute scars the result of bygone crops of eruption. Apart from the disfigurement this rash may give rise to no unpleasantness, though burning heat is occasionally complained of, and itching is common; the latter may be excessive, indeed one patient told me that he "could scratch his face off."

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* "On Diseases of the Skin," by F. Hebra, M.D. *New Syd. Soc. translation*, vol. ii., p. 292.

† *Op. cit.*, p. 290.

Diagnosis.—In some persons, working amongst *Tar* or substances containing it, or the external use of tarry preparations, produces inflammation at the orifices of the hair and sebaceous follicles in the shape of red nodules, in the centre of each of which a black speck is seen owing to the intrusion of the tar into the orifice of the duct, an eruption which may be mistaken for acne. But there should be no difficulty in the diagnosis, for in the so-called tar-acne there is the history of the patient having been exposed to the influence of the tarry preparation; the eruption has no special seat of predilection, its situation depending upon where the tar has been applied; and, if its employment is discontinued, the rash disappears within a few weeks leaving no trace behind it.

The eruptions which frequently occur in those who are taking the *bromides* or *iodides* sometimes resemble that of acne, and all the more that they often appear on the face, chest, and back; but in them there is a history of the administration of one of these drugs, there is an absence of black specks in the centre of the nodules, the eruption is of definite duration, appearing after the medicine is begun and disappearing soon after it is stopped, so that an error of diagnosis is hardly excusable.

The following table should enable the reader to distinguish

Acne from	**Syphilitic eruptions.**
1. Commences usually between puberty and twenty-five.	1. Age at commencement depends on the time when the poison entered the system, of which often there is a distinct history, it may be years before.

2. Patient usually otherwise healthy.	2. Patient often cachectic, and other manifestations of syphilis commonly present.
3. Eruption limited to face, chest, and back.	3. May affect all these parts, but never exclusively.
4. Eruption bright red or violet in tint.	4. Eruption more or less coppery in the chronic stage.
5. Eruption usually discrete, and never in circles or segments of circles.	5. Eruption frequently confluent, and often in circles or segments of circles.
6. No tendency to ulceration.	6. Ulceration common.
7. Itching often present.	7. Itching usually absent—always in the case of the early manifestations.
8. Readily influenced by external treatment.	8. Easily removed by anti-syphilitic treatment.

Treatment.—After rectifying any temporary derangement of the general health which may be present, and especially constipation and digestive derangement, the *constitutional treatment* to be prescribed will depend on the surroundings of each case. If the patient is chlorotic, preparations of iron, if manifestly strumous, anti-strumous remedies, and above all phosphorus and cod-liver oil in full doses, are to be recommended (see treatment of strumous affections). If the eruption appears in an aggravated form, which is sometimes the case even although there is no strumous taint, it may be moderated at least by a course of tonics, particularly arsenic and strychnia; and, if suppuration is a prominent feature, the sulphide of calcium in quarter grain doses three times a day, in pill or solution, may be tried. Dr. Arthur Jamieson (London) strongly recommends the use of the bromide of potassium in 20-grain doses thrice daily, especially just before and during menstruation, where there is evidence of ovarian irritation with its attendant menorrhagia, and has reported four cases in which it proved beneficial.* It must be admitted, however, that, as a rule, internal remedies are of subordinate value in the treatment of acne, seeing that a sluggish and obstructed condition of the sebaceous glands and follicles is at the root of the complaint, and that, as yet, we know of no internal medicine which specially acts upon them; but I am not without hope that, just as pilocarpine has recently been found to react powerfully on the sudoriparous glands, we may ere long be put in possession of a remedy which will stimulate their sebaceous allies to a more healthy action.

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* *Practitioner* for May, 1889, p. 346.

The *local treatment*, therefore, is that upon which our chief reliance must be placed, though it must be allowed that acne is a troublesome complaint to deal with successfully, and, as Hebra has remarked, "the true conclusion to be drawn from . . . the declaration of great surgeons that it is ridiculous to trouble oneself about the cure of 'pimples'—is not that this disorder is either insignificant or harmless, but purely and simply, that these writers really do not know any certain remedy for it, and so are accustomed to hide their ignorance under an affectation of superiority."* Now, there can be no doubt that in the vast majority of cases patients can be greatly improved by treatment, and although an early and absolute cure cannot be anticipated with confidence, it is cruel advice to tell a young lady who suffers from what she usually terms a bad complexion, that the eruption should be left alone, as it will disappear of itself when she gets a little older; for, apart altogether from the fact that the disfigurement can be much ameliorated by treatment, and the disease kept in check, we can, if consulted in time, avoid in great measure those disfiguring cicatrices which never disappear.

Our first care, then, is to remove the sebum-plugs, which, of themselves disfiguring, may be expected moreover to prove the starting points of fresh centres of inflammation. This can be effected by means of one of Volkmann's scoops, as modified by Ausspitz. (See treatment of comedones, p. 71.) The same procedure is to be adopted when inflammation has occurred around the comedones; but, if there are no distinct orifices, or if abscesses form in the substance of the skin or cellular tissue, they must be lanced, the contents being thoroughly expressed with the spoon. It is often of advantage to wash the affected parts every night, or night and morning, with very hot water, and afterwards to apply friction with a rough towel, previous to the employment of one of the preparations about to be mentioned. Sometimes, too, vapour baths are of service, but above all Turkish baths, with thorough shampooing. With the view of further stimulating the skin, soaps of various kinds, including No. 3 krankenheil, sand, Brooke's, and black soap, may be freely used. A very good substitute for the last is Hebra's spiritus saponis alkalinus,† and, if further stimulation is required, 1 or 2 grains of the perchloride of mercury may be added to each ounce. The remedy, however, which enjoys the greatest reputation is sulphur in some shape or form to which 1 per cent. of a solution of peroxide of hydrogen may be added to prevent the comedo-spots from being blackened. The following formulæ may be tried:—

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* *Op. cit.*, p. 293.

† ℞ Saponis viridis, ... ℥ij.
Spiritûs vini rectificati, ... ℥i.
Solve, filtra et adde.
Spiritûs lavandulæ, ... ʒij. —*M.*

℞ Sulphuris,		
Glycerini (Price), āā,	ʒi.	
Cerati galeni,*	℥i.	—*M.*

Sig., To be applied firmly every night short of causing pain or inflammation.

In this prescription from 1 to 2 drachms of the hypochloride of sulphur may be substituted for the sulphur. Bulkley recommends the following:—

℞ Potassii sulphureti,		
Zinci sulphatis, āā,	ʒi.	
Aquæ rosarum,	℥iv.	—*M.*

Sig., apply to the face on muslin twice a day, and wash the face with tar soap.†

This is a very mild stimulant, and is therefore most applicable in the case of very sensitive skins.

Zeissl made use of the following lotion:—

℞ Lac. sulphuris,		
Glycerini,		
Spt. vini rect.,		
Potass. carbonat.,		
Œther. sulph., āā,	℥ss.	—*M.*

Another lotion, which is much appreciated in Germany, is Kummerfeld's, of which the following is the formula:—

℞ Sulphur. precip.,	ʒij.	
Camphor.,	grs. x.	
Gum. mimosæ,	℈i.	
Aquæ calcis,		
Aquæ rosar., āā,	℥ij.	—*M.*

Sig., Shake the bottle. Apply at bedtime, and in the morning remove the sulphur without wetting the skin.

Unna recommends that the parts should be washed with superfatted sulphur, marmor, or sublimate soap; and the application of pasta zinci sulphurata (see p. 181), or zinc gelatine (see p. 172), with 20 per cent. sulphur or 1 per cent. perchloride of mercury added; or the following ointment:—

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* Cold cream — Rumex ointment may be used instead of cold cream—the following being the formula for its preparation:—Rumex root, 9 ounces; lard, 6 ounces; yellow wax, 1 ounce; water sufficient quantity. Wash and bruise the roots; boil for two hours and strain; evaporate to 4 ounces; add gradually to the wax and lard previously melted, and keep stirring until cold.

† *Handbook of Skin Diseases*, by Dr. Isidor Neumann. Translated by Lucius D. Bulkley, M.A., M.D. D. Appleton & Co., New York, 1872. p. 202.

℞ Lanolin, ...	pts.	5	
Adipis, ...	„	10	
Sol. hydrogen peroxid, . .	„	10	
Bismuthi oxy. chloridi, . .	„	2	
Sulphuris, ...	„	2	—*M.*

Care must be taken not to combine sulphur with preparations containing mercury or lead, else the skin will be blackened by the formation of the black sulphuret of mercury or lead which ensues. This unpleasant result not unfrequently happens inadvertently. Thus, if the skin has been irritated by a lotion or ointment containing sulphur, diachylon ointment is a favourite sedative application, and a black discoloration of the skin ensues.

A cosmetic lotion much used by the Orientals as a beautifier of the skin, and containing corrosive sublimate and albumen, is often of use. The following is the formula for it:—

℞ Hydrargyri perchloridi, . . .	℥i.	
Aquæ destillatæ, ...	℥iv.	
Ovorum xxiv. albumen,		
Succi citri (*i.e.*, Malæ medici), . .	℥iij.	
Sacchari, ...	℥viij.*	—*M.*

Sig., The Oriental lotion.

Whatever remedy is employed, its use must be intermitted, if it inflames the skin, and recommenced whenever the irritation has subsided. In some cases good results are obtained from cautiously moistening the summits of the nodules with fluid carbolic acid, or the acid nitrate of mercury, repeating it every three or four days if necessary, or by applying in a similar manner a mixture of tincture of iodine and aqua ammoniæ.† When the skin is much infiltrated, mercurial plaster may be applied on cloths at night, as recommended by Neumann. In obstinate cases, and when the patient can remain

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* "On Diseases of the Skin," by F. Hebra, M.D. *New Syd. Soc. translation*, vol. ii., p. 297.

† ℞ Tincturæ iodi, ...	ʒi.	
Aquæ ammoniæ, ...	ʒij.	—*M.*

Let the mixture stand for a couple of days before filtering. The filter should be burned, because the iodide of ammonium when dry is very explosive (Sir J. Y. Simpson).

indoors for a few days, the following ointment can be strongly recommended:—*

℞ Naphthol,	ʒiiss.	
Sulphuris præcipitati,	ʒiss.	
Saponis mollis,		
Vaselini, āā,	ʒv.	—*M.*

This is applied firmly every half-hour until the skin is inflamed. On the following day desquamation begins and lasts for about a week, and then, if necessary, the process is repeated.

In similar cases Unna uses the following:—

℞ Zinci oxydati,	pts.	10
Terræ siliceæ,	„	2
Adipis benzoati,	„	28
Resorcin,	„	40

Liege artis terendo misceantur.

This is applied three times a day until the skin becomes bronzed, after which the parts are dressed with zinc-ichthyol salve muslin or zinc-ichthyol gelatine (see p. 172) until the skin peels off.

XIV. ROSACEA.

Syn.—*Acne rosacea—Gutta rosea—Copper-nose.*

This disease has usually been considered to be a variety of acne, hence the term acne rosacea generally applied to it. This error—for pointing out which we are specially indebted to Hebra—has arisen from the fact that the face is attacked in both complaints, that rosacea may occur along with acne as an accidental complication, and that the one has often a superficial resemblance to the other. But, as we shall see presently, the morbid process is quite distinct from that of acne.

Rosacea is a very common affection, although not nearly so much so as acne, as is shown by the circumstance that of 38,054 of my hospital cases there were 411 of rosacea against 853 of acne. In private practice both diseases are much more frequent, for of 2,000 consecutive cases there were 52 of rosacea and 122 of acne.

It is much commoner in females than in males, as shown by the fact that of 31 cases (in 1,000 patients with skin diseases in private practice) 23 occurred in females and only 8 in males, although this statement is qualified by the fact that the former are much more likely to seek advice than the latter. The age of these patients varied from 20 to 67, the average being 37.

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* *L'Union Medicale*, Oct. 12, 1889.

Rosacea is very often produced by, and associated with, digestive derangement, and in most cases we have to reckon with debility in some shape or form. The probable reason for the frequency of the disease amongst those who take stimulants to excess being the deterioration of the general health which is thus produced. All kinds of stimulants, however, are not equally deleterous, beer being much less so than brandy and wine, and some wines more than others. "This is the case," wrote Hebra, "especially with the Austrian and Rhenish wines, which are poor in alcohol, but contain tartaric acid and ethereal oils in abundance; while the disease is much less likely to be set up by the more fiery and more highly spirituous wines of Hungary and Spain." *

While intemperance is a very frequent source of it in males, debility, otherwise induced, is a more usual cause in females; in them, too, some derangement of the sexual functions or menstrual disorder is often present, although it is difficult to say whether we are justified in regarding these as causes of the complaint, or whether they are both the offspring of the same parents. But this at all events is certain, that the eruption is very apt to become aggravated at the menstrual periods; and, while in males the tendency is for the disease to make its appearance about middle life, it is most apt to commence in females about puberty, or at the period of cessation of the menses.

Those who are in the habit in all weathers of employing cold baths, irrespective of the stagnation of the circulation which may result from them, are very liable to suffer, as well as those whose faces are constantly exposed to cold and vicissitudes of climate, as cab-drivers and the like; and it is also said that the continued exposure of the face to great heat—as in the case of puddlers, bakers, cooks, &c.—is capable of inducing it, although there is some doubt upon this point. In a good many cases no satisfactory cause can be made out.

Symptoms.—The eruption invariably makes its appearance upon the face, commencing usually at prominent points such as the nose, chin, cheeks, or brow, but it may implicate the whole face, or may even spread up to the head, especially in bald persons. The symptoms may be divided into three stages or varieties, one or other of which may predominate. In the first there is simply dilatation of the small vessels and capillaries—along with a new formation of vessels—some of which are seen ramifying tortuously beneath the skin (telangiectasis). In the second, redness of the surface makes its appearance, which is at first congestive and transitory, occurring chiefly on excitement, or after food or the use of stimulants, but later on is permanent and inflammatory, and usually accompanied by slight desquamation. As the disease advances papules and pustules not unfrequently make their appearance, and the surface is apt to have a dusky tint, especially after meals and in cold weather. Generally, too, there is a profuse secretion of sebaceous matter, giving to the surface an oily appearance and feeling, and often the patient experiences a sensation of heat in the part, which may be constant, or only at the times previously mentioned. In the third stage or form, which is not necessarily preceded by the others, owing to cell infiltration and the new formation of connective tissue, hypertrophy of the tissues of the skin becomes apparent, the parts having a thickened and coarse appearance. This may gradually increase until at last veritable tumours (rhinophyma) may form, which are either sessile or pedunculated, and which may even hang down from the patients nose as far as the chin. The colour of these tumours may be red, or that of the normal skin, but in any case the surface has a coarse appearance owing to dilatation of the orifices of the sebaceous follicles. In men—especially those who are intemperate in their habits—the more advanced and worst forms of the disease are observed, while in women it rarely passes beyond the second stage.

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* "On Diseases of the Skin," by F. Hebra, M.D. *New Syd Soc. translation*, vol. ii., p. 330. London, 1868.

Hebra, with his usual acuteness of observation, has separately described the brandy-face and the wine-face. The brandy-face "is frequently confined to the nose, where it sometimes manifests itself simply by an excessive distension of the blood-vessels, forming lines between which the skin is of its natural colour. In other words, the appearance of the nose would be healthy were it not for the presence of these large ramifying vessels."

"In such cases, the temperature of the end of the nose is generally obviously lowered. The part feels cold when touched. It has however, a shining, greasy appearance, which shows that the sebaceous glands are in a state of excessive activity."

In the latter, "the face generally is of a dark red colour. In these subjects the redness is either universal, or, if confined to certain parts, it is deeper than in those whose drink is brandy. The affection does not consist simply in the presence of numerous vascular twigs; the surface of the skin between the blood-vessels is itself altered in colour. The whole face has a bloated appearance." *

This affection is essentially a very chronic one, and aggravated cases not unfrequently last for many years.

Diagnosis.—The diseases most apt to be mistaken for rosacea are acne vulgaris, syphilitic affections, lupus erythematodes, and frost-bite of the nose. As an aid to the diagnosis, the following table may be consulted :—

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* *Op. cit.*, p. 325.

Rosacea.	Acne vulgaris.
1. Most frequently commences about middle life.	1. Begins between fifteen and twenty-five years.
2. Affects the face only.	2. Chest and back often attacked as well as face.
3. Digestive derangement, debility, or intemperance generally at the root of the complaint.	3. Independent of any such cause, but always preceded and accompanied by comedones.
4. Generally dilatation of the blood-vessels discovered.	4. No dilatation of vessels.
5. In aggravated cases distinct tumours may form, but never abscesses.	5. There may be abscesses, but no tumours.
6. Eruption persistent.	6. Occurs in successive crops.

Rosacea.	Syphilitic affections.
1. Preceded by dyspepsia, intemperance, debility, or one of the other causes mentioned.	1. Often a history of contraction of syphilis.
2. Colour of eruption dusky red, or violet.	2. Colour of eruption more or less coppery in tint, except at the outset.
3. Suppuration, crustation, and ulceration never observed.	3. These symptoms common.
4. Eruption never in circles or segments of circles.	4. Often arranged in circles or segments of circles.
5. Superficial vessels enlarged; orifices of sebaceous follicles conspicuous, and surface often oily.	5. None of these characters observed.
6. Aggravated forms of the eruption (which are most likely to be mistaken for syphilis) usually occur in men, and at or after middle life.	6. May be observed in both sexes, and often before middle life.
7. No other concomitant lesion.	7. Concomitant manifestations of syphilis frequently discovered.
8. Often continues for years.	8. Chronic, but not so much so.
9. Mercury and iodine, administered internally, useless if not injurious.	9. Removed by anti-syphilitic treatment.

Rosacea.	Lupus Erythematodes.
1. Occurs oftenest in those who are dyspeptic, intemperate, or otherwise debilitated.	1. Occurs in strumous subjects, although there may be no other manifestation of it present.
2. Limited to the face.	2. Ears and head often affected, and sometimes the hands, as well as the face.
3. Dilatation of superficial vessels; and papules and pustules common.	3. None of these symptoms present.
4. Sebaceous follicles dilated, plugged with soft sebum-plugs, and surface oily.	4. Sebaceous follicles dilated and plugged with hardened sebum-plugs, and surface not oily.
5. Surface not scaly.	5. Surface often covered with dry scales adhering firmly to the sebum-plugs.
6. No scars left when eruption disappears.	6. Cicatricial appearance of skin left.

Rosacea (limited to nose).	Gelatio (frost-bite), limited to nose.
1. Common.	1. Rare.
2. Usually commences in middle life.	2. Often in young persons, specially in chlorotic girls.
3. Bright or dusky red.	3. Bluish-red.
4. Vessels and orifices of sebaceous follicles dilated and surface greasy.	4. Surface swelled and shining, but not greasy.

Treatment.—*Constitutional treatment* is very important, and I cannot, therefore, subscribe to Hebra's dictum that very little can be looked for from internal medicines. In all cases we must attend carefully to the general health, especially to the state of the digestive and uterine organs; and debility, which is so generally present, especially in females, must be removed with the aid of generous diet, a moderate amount of stimulants, and tonics, especially arsenic. In dyspeptic cases gr. xv to gr. xxx per day of ichthyol in pills or capsules may be prescribed with advantage. When patients have been addicted to the abuse of stimulants, these must be entirely given up, but when debility is present ʒij to ʒiv of whisky in potash water at lunch and dinner is of service.

The *local treatment* is equally important. If dilatation of the superficial vessels is a prominent feature, these should be slit open longitudinally, or punctured at each end and touched with caustic or liquor ferri perchloridi; or they may be obliterated by means of electrolysis, as recommended by Hardaway of St. Louis:—"The finest cambric needle, attached to the negative pole electrode of the galvanic battery, is used, the needle being inserted sufficiently deep to enter the dilated vessel. The circuit is then made by the patient taking the positive pole in the hand. After the electrolytic action has been properly developed, from six to ten elements of the battery being generally necessary, the patient releases the positive electrode, after which the needle is withdrawn. If the vessel is a long one, several punctures must be made perpendicularly along its course; if a short one, the needle may be inserted parallel with and into the lumen of the vessel."[*] They may also be destroyed with the aid of Unna's microbrenner.[†]

In addition to this the inflammation of the skin should be attacked by means of one of the lotions or ointments mentioned under the head of acne, or a 5 to 10 per cent. ointment of ichthyol may be substituted and is often efficacious; but, if there is much hypertrophy of the skin, the application of the emplastrum hydrargyri of the German Pharmacopœia,[‡] as recommended by Neumann, or Briersdorf's emplastrum hydrargyri, may be tried.

Finally, if distinct tumours have formed, there is nothing for it but to remove them by operation.

XV. ECTHYMA.

(ἐκθύω = *I burn out.*)

This is a pustular affection, but the pustules differ from those of other diseases, such as eczema, in that they are isolated as well as much larger (phlyzacious pustules).

Symptoms.—This eruption may appear upon any part of the body, but that to which the term should be limited is generally met with upon the lower extremities. The outbreak is characterised by the development of scattered pustules of large size, which are generally round, with broad red areolæ, and, as a rule, they are not numerous

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[*] *A Practical Treatise on Diseases of the Skin*, by L. A. Duhring, M.D. J. B. Lippincott & Co., Philadelphia, 1881. Second Edition, p. 276.

[†] See *Monatshefte für praktische Dermatologie*, X Band, 1890, No. 1.

[‡]

℞ Hydrargyri, ...	℥iv.
Terebinth. commun., . . .	ʒij.
Ceræ flavæ, ...	ʒiij.
Empl. plumbi, ...	℥iss.

Ft. unguent. —*M.*

although they frequently appear in successive crops. The pustules are sometimes distended with pus—but they are oftener flaccid, in which case the contents may be sero-purulent or even sanguinolent (ecthyma luridum)—and, sooner or later, dry up into crusts: these are usually thick, rough, adherent, and brownish, although they vary in colour with that of the contents of the pustules. It is said that they sometimes assume the limpet shape (rupia non-syphilitica), but there is good reason to suspect, at least when this form is typically present, that the eruption is then syphilitic, and one which will be discussed under the head of the latter disease. When the crusts fall off, they leave behind them round red spots which gradually fade, but occasionally ulcers are left which have no special characteristic, varying, as they do, like other simple ulcers: these are often tedious, and when they heal up there is more or less of a cicatricial appearance left. Not unfrequently the irritation of the eruption leads to enlargement of the neighbouring glands—in the groins, for example, when the lower extremities are affected.

It is undeniable that, in at least nine cases out of ten, ecthymatous pustules occur as a feature or complication of other diseases, especially those associated with itching (scabies, phtheiriasis, prurigo, &c.), but we cannot agree with Hebra, who wrote as follows:—

"All pustules must be regarded as *secondary morbid products*, and hence are not fitted to form an independent species of cutaneous diseases. There are, therefore, no proper pustular diseases; but only pustules which may occur in the course or as the effects of many different affections of the skin."* For there can be no doubt that, in those whose health is broken down from excesses, insufficient diet, unwholesome dwellings, chronic disease, and the like, this eruption may supervene, especially in persons of bad constitution; and it is a significant circumstance that my statistics do not show a single case of ecthyma in 2,000 consecutive cases of skin disease amongst the upper classes, but 211 in 38,054 in public practice. There can be no question, however, that, in many cases, irritation of the skin—such as scratching induced by inattention to cleanliness—is a common exciting cause.

Diagnosis.—From what has been said it is obvious that some skill is required to distinguish true ecthyma from diseases associated with the development of large pustules. It would occupy too much space to consider in detail the differential diagnosis, but the following tables may assist the reader in distinguishing it from two of the most important of these, viz., scabies and syphilis:—

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* "On Diseases of the Skin," by F. Hebra, M.D. *New Syd. Soc. translation*, vol. ii., p. 345.

Ecthyma.	**Scabies.**
1. Not contagious.	1. Contagious.
2. Itching, if present, not a prominent feature.	2. Itching great, especially at night.
3. Pustules most frequently on the lower extremities.	3. Seats of predilection the hands, feet, and buttocks.
4. No other eruption present, as a rule.	4. Vesicles common between the fingers, and a pruriginoid eruption (produced by the nails in scratching), especially on forearms, abdomen, and inner sides of thighs.
5. No furrows to be detected.	5. Canals in the substance of the skin containing the female insect and its eggs, especially between fingers, on wrists, and penis.
6. General health manifestly below par.	6. General health unaffected.
7. Removed by improving the general health.	7. Removed by local treatment (sulphur, &c.), which kills the acari.

Ecthyma.	**Ecthyma syphiliticum** (*so called*).
1. Occurs as the result of deterioration of the general health.	1. Occurs as the result of the entrance of the syphilitic virus into the system.
2. No other cutaneous manifestations present, as a rule.	2. Other cutaneous manifestations of syphilis common, and usually other syphilitic symptoms.
3. Crusts rarely assume the limpet shape—never typically.	3. Crusts often limpet-shaped (rupia syphilitica).
4. Ulceration less common, and when present has the character of simple ulceration.	4. Ulceration very common and ulcers rounded, sharply cut, and with ash-grey bases and coppery edges.
5. Removed by improving the general health.	5. Removed by anti-syphilitic treatment.

Treatment.—From what had been said with regard to the ætiology of this complaint it is manifest that the way to remove the disease is to improve the general health. This is to be effected by good food, fresh air, and healthy surroundings. Tonics are also indicated, the selection of which must vary in different cases, and, when the patients are strumous, cod-liver oil, phosphorus, and other anti-strumous remedies are to be recommended: often too the cure is accelerated by a complete change of air and scene.

Locally all sources of irritation should be removed—for example, warm baths containing a handful of starch may be used for the relief of itchiness of the skin resulting from inattention to cleanliness. The pustules may be punctured and the pus allowed to escape, the crusts should be removed, and the parts treated on similar lines to those applicable to acute eczema (see p. 168), and, when the lower extremities are involved, the limbs may with propriety be bandaged. If ulcers are present, they must be treated according to their temporary pathological condition (see treatment of ulcers).

XVI. FURUNCULUS.

(*Furuncle—Boil*).

This is such a common affection that there are few who do not experience it, in its minor forms at least, at some period of their lives, and, as in the majority of cases medical advice is not taken, statistics are an utterly fallacious guide to its frequency.

Although a single furuncle is a comparatively trifling affair, it is otherwise when—as not unfrequently happens—there is a succession of them spread over many months, for then the general health is pretty sure to suffer to some extent. They occasionally begin in the subcutaneous cellular tissue, but generally in glands, especially the sebaceous glands, and hair follicles; not unfrequently the glands at the edges of the eyelids (in which case the boil is popularly denominated a stye) or the ceruminous glands are attacked, and less frequently the sudoriparous (particularly in the axillæ).

The commencement of a boil is usually indicated by some itching, and the development of a small papule or vesicle or pustule, through the centre of which a hair generally passes, and which at first is so insignificant that it is very apt to be overlooked: but within four-and-twenty hours it becomes tender, is more elevated, has a reddened and hardened base, and becomes acuminated—features which become more pronounced as the boil approaches maturation. In a few days the pustule in the centre gradually enlarges, and dries up into a yellowish crust; and, when this is removed, a yellowish matter—the core or slough in the centre of the boil—is seen, which resembles pus in appearance; but at this stage pressure is followed by hardly any discharge, but by considerable pain, and often a drop of blood is expressed. Within a day or two, however, suppuration takes place around the core, and then, on pressure, there is more free discharge of pus, and along with it the central core is extruded. The part then rapidly heals, although a small scar, which at first has a violet tint, is often left, the whole process occupying from about four to ten days. When the inflammation is at its height considerable tension and pain and great tenderness are apt to be experienced, while sympathetic enlargement of the neighbouring glands is common.

While furunculi may be extensively diffused, usually only one forms, or a few form, at a time; but the morbid condition may be kept up indefinitely, owing to the development of successive crops. These may appear on any part, but have a tendency to be concentrated in the vicinity of the part first affected. Occasionally the boil commences in the subcutaneous cellular tissue, especially when the axilla is involved, and then it closely resembles a small abscess (subcutaneous boil); and sometimes it does not mature, there being no suppuration or separation of core, but merely a hard and painful indurated swelling, which subsides very slowly (blind boil). Generally, there is little or no constitutional reaction unless in highly irritable and nervous subjects, in whom there may be slight febrile movement, which, along with the pain and tenderness, may prevent them from following their avocations.

Furunculi may attack any part of the body except the palms and soles, but they have a special tendency to implicate the back of the neck, the axillæ, the hips, the meatuses, and the edges of the eyelids (stye).

Ætiology.—This affection is most common in middle life, and during spring and autumn, especially the former, and it is more frequent in males than in females. The *exciting* cause, when such can be discovered, is local irritation, such as pressure, the friction of clothing (the edge of the collar, for example), and scratching the skin; hence it is a common complication of itchy skin diseases, such as eczema, prurigo, phtheiriasis, and scabies. *Predisposing* causes are not always to be made out, the general health, at the outset at anyrate, being often apparently quite satisfactory. In some cases, however, the disease is the result of sewage poisoning, while in others a full habit of body, or digestive derangement and constipation, lies at the root of the affection, or depression of the nervous system, such as results from mental worry, while occasionally the disorder occurs as a complication of diabetes, so that it is a good rule to satisfy ourselves, by an examination of the urine, that sugar is not present. At times this disease occurs in the epidemic form, which favours the view recently promulgated that the inflammation is set up by micrococci, especially the staphylococcus aureus, which penetrate into the glandular structures of the skin, and set up localised sloughing.

Diagnosis.—The grand characteristic of a boil is its central core or slough, and the only diseases which may be mistaken for it are malignant pustule (hereafter to be considered) and carbuncle.

Anthrax or carbuncle is usually solitary, has less tendency to occur in successive crops, is less painful, flatter, larger—a boil rarely exceeds the size of a hazelnut, while a carbuncle, although it may be no larger, sometimes assumes enormous proportions—and like an aggregation of boils. But the most distinctive feature is this, that, while a central slough, which does not involve the skin, characterises the furuncle, gangrene attacks the skin in the case of the carbuncle, or, as Hebra has remarked, "its roof undergoes mortification." The latter, too, always discharges through more than one opening.

The **prognosis** is almost invariably favourable, though, when the affection occurs in broken-down subjects and is prolonged, death may ensue from exhaustion, and even from purulent absorption and pyæmia, although not nearly so frequently as in the case of anthrax.

Treatment.—The *constitutional treatment* of this affection consists in correcting any derangement of the general health which may be present, and which presumably has had some influence in its production: thus, when it occurs as a complication of diabetes, the constitutional treatment is merged in that of the primary disease; if digestive derangement or constipation is present, it must be treated on general principles; if it can be traced to an overtaxed nervous system, depression of spirits, or anxiety, such conditions must, if possible, be overcome, and it is especially in these cases that a complete change of air and scene is desirable. When the general health is below par, either as an antecedent condition, or in consequence of the long continuance of the affection, tonics are indicated, in the selection of which we must be guided by the surroundings of each case; but, when the disease is chronic and obstinate, the best results are sometimes obtained from a course of arsenic, or quinine in full doses (3 to 5 grains thrice daily). Sometimes we may succeed in arresting their further development by the administration of sulphide of calcium, which may be given in doses of from $\frac{1}{8}$ to $\frac{1}{2}$ a grain in pill or solution,* or of the hyposulphite of sodium in doses of 30 grains every three hours. Fresh yeast in doses of a tablespoonful three times a day has also been tried, and it is said with success, and Hardy recommends the administration of tar-water to the extent of a quart in twenty-four hours. Finally, mineral waters are often of service in obstinate cases, especially those containing sulphur—*e.g.*, Harrogate, Barèges, Luchon, or Weisbaden. Alkaline mineral waters are specially to be recommended in the subjects of the lithic acid diathesis—*e.g.*, Vichy, Bourboule, or Royat; ferruginous waters in debilitated persons, such as those of Spa; and in diabetic subjects, Carlsbad is particularly to be recommended.

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* ℞ Calcii sulphidi, ... grs. iij.
Aquæ, ... ℥iij. —*M.*

Sig., Shake the bottle. A teaspoonful every two hours. This solution should not be exposed to the light, and should be made up fresh every second day.

The *local treatment* is often more effectual than the constitutional, for if the summit of the papule, which is the starting point of the boil, is moistened once with fluid carbolic acid, acid nitrate of mercury, tincture of iodine, or a saturated solution of nitrate of silver (℈i to ℥i), not only may its further progress be arrested, but the bad habit which the system has contracted may sometimes be put a stop to altogether. The same result may follow the extraction of the hair which is often seen to pass through the centre of the commencing boil. But, in order to be effectual, such treatment must be carried out *at the very onset* of the boil, and before there is any surrounding redness or induration. Ice-cold applications, as recommended by Hebra—although they are not so likely to put a stop to the process—give much relief and limit the extent of the inflammation. But, whether the boil has been arrested or not, the part must be protected from friction and the pressure of the clothing: this can be accomplished in various ways, such as the application of a corn-plaster (or a bunion-plaster in the case of a large furunculus), the orifice in the plaster corresponding with the centre of the boil. Sir Erasmus Wilson recommended the application of a circular piece of the galbanum and opium-plaster spread upon wash leather, and, when the boil has matured, a hole is cut in the centre of the plaster for the escape of its contents. A favourite application in Germany is the emplastrum hydrargyri, oxidi zinci, acid carbolic, et hydrargyri perchloridi. When the boil has thoroughly matured the crust which covers it may be removed, when a little pressure will cause the discharge of the pus and central core. It is only exceptionally, especially in the case of subcutaneous boils (such as are common in the arm-pit), which are slow in reaching the surface, that the lancet is required. When the inflammation is at its height, and the parts are tense and painful, a starch poultice may be applied, the surrounding skin being protected by smearing it with oil or glycerine; but constant poulticing is to be deprecated, as it favours the development of fresh centres of inflammation in the surrounding parts.

In conclusion, all sources of local irritation, which have been sufficiently indicated in connection with the ætiology, must, if possible, be removed.

XVII. ANTHRAX—CARBUNCLE.

By H. C. Cameron, M.D.

Carbuncle, while seldom less distressing than an attack of boils, is always more dangerous; and, in addition, has so many characteristics which distinguish it from that very similar, but less severe, ailment, both as regards pathology and treatment, that it must be considered separately. At the same time, in the main, the one is but a very exaggerated and altered form of the other, and individual cases occur now and then in which it is difficult to make an accurate diagnosis, the difficulty being sometimes escaped by recognising this hybrid or intermediate form of the disease under the name of "carbuncular boil." But, as a general rule, the characters of carbuncle are broad and distinct.

Clinical Characters.—It is an acute circumscribed inflammation of the subcutaneous cellular tissue, which quickly passes into a state of slough, while the overlying skin becomes hard, red, dusky, or even livid, especially in its more central portions. The colour shades off gradually in the peripheral parts, until it reaches that of an ordinary congestion, while beyond, in parts often in no way discoloured, there is generally more or less inflammatory œdema. It feels hard and brawny, but at certain points may, as time passes, become somewhat boggy in character. The pain is severe, sometimes intense; of a throbbing, stinging, or, still oftener, burning character. Handling may or may not greatly increase the suffering. In the later, more exhausting, and dangerous stages of the disease, pain is often altogether absent. The inflamed area shows no disposition to become acuminated like a boil; it is distinguished by induration rather than swelling, and, while increasing and expanding in all directions, it maintains its comparatively flat and very hard character. While it is often limited to a size not larger than a penny, it occasionally acquires alarming proportions. After a time, the dusky and discoloured skin, which roofs in and conceals the slough of underlying cellular tissue, becomes perforated here and there by minute apertures, which appear first as little yellow vesicles or pustules and then burst. Through these may be seen spots of ash-grey material, which is the imprisoned cellular slough, and through them constantly exudes a certain amount of thin purulent matter. To compare soft with hard parts, at this stage of a carbuncle, the slough imprisoned under the skin resembles a sequestrum imprisoned in a shell of bone, the discharge produced escaping in both cases through numerous apertures in the encircling material. But, in the case of the soft parts, unlike that of the hard, the overlying tissues become weaker instead of stronger as time passes. The apertures ulcerate and increase in size, approach one another, and here and there coalesce, until sooner or later, in every case, so complete a breach is made in one or more parts of the skin, that the slough is free to escape. This it does sometimes in one piece; oftener in successive portions; always very slowly, and sometimes with great tediousness.* A granulating cavity is then left, with one or more ragged openings proportioned in size to the amount of sloughing, and, possibly, with extensive undermining and thinning of the skin in all directions. The resulting scar is often less unseemly than might be anticipated, though generally uneven; but a certain discoloration of the skin is likely to linger long, and may never entirely disappear.

In a few cases, the skin resists the ulcerative process for a long time, producing a more chronic form of the disease, but, if incision be resorted to, it will be found not to differ materially from what is described above. A slough of cellular tissue and a little pus will be found to underlie the inflamed but unbroken skin. The constitutional effects accompanying this disease will, of course, be in proportion to the severity of the local inflammation. In the severer cases, its onset will be marked by chilliness, headache, and even sickness; while in the later stages there is often a feeble pulse, a furred tongue, and at times indications of prostration, which may result in a low, typhoid state of the patient, ending in death.

Carbuncles are not usually multiple; they affect men more than women; the old rather than the young; are much more common during some years than during others (epidemic); and probably are oftener met with amongst the rich and well-to-do than amongst the poor. From this latter cause, it is a disease not so often encountered in hospitals as in private practice, although it cannot be said entirely to spare any social grade or class.

Sites.—The favourite seat of carbuncle is on the posterior surface of the trunk, somewhere between the occiput and the sacrum, and especially on or near the back of the neck. It may also be met with on the face or head, on the sides of the thorax or front of the abdomen, as well as, though more rarely, on the extensor aspects of the arms and thighs, and on the buttocks. It is said to be of extremely rare occurrence on the aspects of flexion of the arms and thighs, and on the front of the thorax and neck. The hairy scalp, the lips, and the front of the abdomen (especially "over the pit of the stomach") are all looked upon as situations of especial danger. Carbuncle, attacking the upper lip, is found to be an extremely fatal form of the disease. It is by some regarded as a special variety, and described under the name of malignant or facial carbuncle. How far these cases are not identical with malignant pustule, which will be dealt with in a separate chapter, appears to be a matter open to doubt, in spite of the fact that such writers as Sir James Paget and Mr. Thomas Smith have strongly expressed an opposite opinion. Like malignant pustule (whose favourite seat is the neighbourhood of the lips) these cases are said to occur in young persons, are very acute and rapid in their progress, and kill by the onset of pyæmia. But Mr. Smith points out that they are usually painful, while the absence of pain is a distinguishing feature of malignant pustule, and that pus forms in connection with them to an extent not characteristic of the other ailment. This doubtful point ought to be capable of settlement nowadays by the discovery by the microscope of the presence or absence in the tissues and blood of the *bacillus anthracis*, the micro-organism which is the cause of malignant pustule or charbon.

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* In certain severe cases, the sloughing does not limit itself to the cellular tissue, but may extend to the subjacent fascia and layer of muscles. Sometimes even the bone has thus been laid bare.

Causes.—No doubt, as in the case of boil, anthrax may follow the introduction into the skin of poisonous or irritating materials; but there is seldom any such local cause to be made out. The irritation resulting from prolonged exposure of the skin to a scorching heat, however, seemed to me in one case, which came under my observation, to be directly responsible for the onset of this ailment simultaneously in two gentlemen, one of whom was a man of about sixty, while the other was probably twelve or fifteen years his senior. They were visiting in company a hydropathic institution, and one Sunday afternoon together took a Turkish bath. The usual apparatus for producing the necessary high temperature in the "Sudatorium" being temporarily out of order, a large stove, portions of which were heated to redness, was placed in the middle of the room. They lay in couches near this stove, and, on account of the glare and heat, could only lie with their backs towards it. In the hope of inducing perspiration, they endured the scorching heat on the skin of their backs for a long time, but without the desired effect, and so they passed on to the other stages of the Turkish bath. In the evening, both felt well and went to church. On Monday morning they felt fatigued and out of sorts, but returned to Glasgow and attended to business as usual. On Tuesday both turned ill, and, in a day or two, were suffering from carbuncles. The younger of the two was attended by me. He had three carbuncles on the shoulders, one of them being as large as one's open hand. He recovered after a long and painful illness. The other—a much older man—developed a large carbuncle on the back of the neck, invading the hairy scalp. His illness had a fatal termination in about a fortnight. Low states of the nervous system and of the general health predispose to their occurrence, and so we find over-anxiety, grief, or fatigue, and the weakness accompanying convalesence from typhus and typhoid fever, as well as other serious illnesses—all regarded as occasional factors in their production. The statement has been made by veterinary surgeons, and repeated by the great missionary, Dr. Livingstone, that carbuncles result now and again from the eating of the carcases of animals which have died of pleuro-pneumonia or charbon; but here again there may be a confusion with malignant pustule. The frequency of the disease in persons who show indications of gout, or who are known to belong to gouty families, seems to indicate occasionally a connection between the two; but it must not be forgotten that carbuncles are met with amongst the poor and ill-fed, as well as amongst those who are rich, and who may be more or less addicted to the pleasures of the table. Like boils, they are met with frequently in diabetic patients; but the relation of the two ailments is not well understood, since not only are they an occasional complication of well-marked chronic diabetes, but transient glycosuria has also been noted as occurring during their attacks, and disappearing on their subsidence. In Bright's disease the same proneness to carbuncular swellings is observed now and again.

Prognosis.—Occasionally, what appears to be a distinct anthrax may abort, resolve, and disappear without further trouble. Almost invariably, however, the evil, when once started, is only got rid of after much sloughing and suppuration, and a prolonged and often exhausting illness, in the course of which death may occur in various ways. Thus, the exhaustion consequent on the pain and profuse discharge may prove too much for the patient's age and constitutional powers; or, what is more common, pyæmic or septicæmic disease in some form may supervene and carry him off. Occasionally death takes place unexpectedly. In one case, the local symptoms suddenly lessen and the patient, falling into a state of collapse, quickly dies. In another, during the progress of what is, to all appearance, a satisfactory and hopeful convalescence, he is seized with violent, agonising pain in the epigastrium and, rapidly sinking, dies in a few hours. So far as I know, these sudden deaths are not accounted for by any *post-mortem* appearances which have been observed. In a third class of cases—viz., those in which the hairy scalp is affected, death may occur somewhat suddenly from inflammation and effusion within the cranium. These clinical facts will convince the practitioner of the prudence of always giving a guarded prognosis, especially in cases affecting old persons.

Treatment.—Much difference of opinion prevails as regards suitable treatment, both local and general. Only a few years ago it was the almost invariable practice of surgeons to make an early and free crucial incision through the inflamed area, extending for some distance into the sound tissues beyond in all four directions. They claimed for this treatment that it relieved pain and tension, limited the extension of the disease, and gave the earliest possible opportunity for the free separation and escape of the contained sloughs and matter. The pain of such a procedure is not always so great as might be anticipated, and may be entirely avoided by the use of anæsthetics, while the hæmorrhage is never excessive unless the living parts be incised deeply under the slough or extensively beyond its borders. But Sir James Paget, about a dozen years ago, in a lecture on "The Treatment of Carbuncle" (Clinical Lectures and Essays), strongly condemned this routine practice. He believes that the pain and tension disappear, without incision, as soon as softening and the formation of pustules on the surface takes place, that spreading of the disease occurs as often in cases after incision as in cases that have not been incised, and that nature always makes sufficient openings for the escape of contained sloughs at a sufficiently early period. He recommends that, if the carbuncle is small, it should be covered with emplastrum plumbi spread upon leather, with a hole in the middle to admit of the escape of sloughs. If large, "the best application is the common resin-cerate, which may, in some cases, be diluted. This should be spread large enough to cover the whole carbuncle, and over it should be laid a poultice of half linseed meal and half bread." Each time the poultice is changed, the carbuncle is to be fomented with very hot water, and, if sloughs are being discharged, the cavities are to be washed and syringed out with Condy's fluid and water, or very weak solution of carbolic acid or chloride of zinc.

In choosing one or other of the above courses, we ought to be guided by the circumstances of each individual case. An early crucial incision through a tense, painful carbuncle, in a comparatively healthy patient, undoubtedly, often gives great relief; but this treatment has in the past been adopted, no doubt, too much as a matter of routine. In very many cases, and especially in old and weakly subjects, it may be found better to follow the lines of treatment laid down by Paget.

Subcutaneous incision along with the external use of collodion has been advocated by Mr. French. A tenotomy knife, having been entered at the circumference of the swelling, is carried below it, and the indurated tissues are divided towards the skin, care being taken not to wound it elsewhere than at the point of puncture. One or more such incisions may be made. The swelling is then painted over with collodion and the sloughs allowed to escape through apertures at the circumference.

Potassa fusa has by some been substituted for the knife in exposing the slough, large portions of the skin overlying it being destroyed by the free application of this caustic. The part is then dressed with resin-cerate, and kept scrupulously clean by frequent washings with antiseptic lotions. When much diffuse redness surrounds the carbuncular swelling, it has been found of advantage to paint over the inflamed skin with collodion or, as Mr. Pritchard of Bristol has recommended, with a paint composed of a scruple each of iodide of potassium and iodine in one ounce of collodion.

Mr. O'Ferral has recommended the early and continued use of pressure as a means of limiting the disease and relieving the pain; and others have given evidence in favour of the benefit it gives in these respects. He effects compression, in the case of very small swellings, by the contractile properties of collodion freely applied to the cutaneous surface. In other cases, he recommends that a piece of brown soap plaster, spread on leather, with a hole to admit of the escape of discharges, be placed over the carbuncle. Strips of adhesive plaster, having a good hold on the surrounding healthy skin, are then drawn tightly across this, so as to exert firm pressure.

Dr. Eade, of Norwich, brought before the profession, in 1869, a plan of treating carbuncle by carbolic acid, with the view of making it abort, or, at least, of limiting its extension. He recommends that the acid be made to soak into the slough through the ulcerated apertures in the skin; or injected, if need be, in the form of a watery solution, with a hypodermic syringe.

The constitutional, like the local, treatment employed in this disease has shown of late years a considerable reaction in favour of less heroic measures, especially in the matter of alcoholic stimulation. But, after all is said on this subject, each case must be dealt with on its own merits, and the question of stimulants and their amount must be decided entirely by considerations concerning the age and previous mode of living of the patient, and the severity of the disease. Amongst medicines, quinine in large doses frequently repeated is held in high esteem by some, while others are inclined to view it as unnecessary and useless.

The digestive organs, in all cases, must be carefully attended to; the food must be nourishing, abundant, and easily assimilated, while a free supply of fresh air is essential both by night and day. Experience seems to show that patients progress well who are not too much confined to one room; and, if great weakness and pain do not forbid it, there seems no objection, but the contrary, to allowing the sick man to move freely about the house (Paget).

XVIII. PUSTULA MALIGNA.

Malignant Pustule—Anthrax—Charbon.

By H. C. Cameron, M.D.

It has been remarked that the wise physician will not wholly neglect the study of the diseases of animals, and especially of those which come into closest contact with man. Disease is apt to be communicated to him from one and all of such animals—from those, like the horse and dog, which are his faithful servants and companions; from those, like the ox and sheep, which supply him with much of his food and clothing; and from those, like the mouse, which intrude themselves upon his hospitality. In the great majority of cases of disease so acquired, the skin is the point of entrance of the contagium.

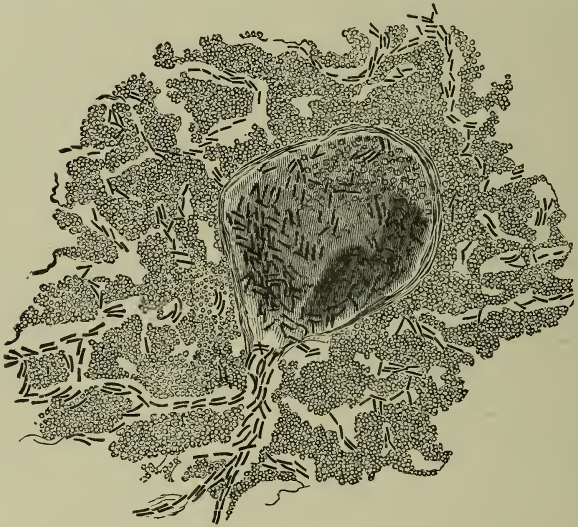

Fig. 15.

Section from the liver of a rabbit which died of Anthrax, after inoculation with the virus. The central vein of the hepatic lobule, filled with rod-shaped organisms, is seen in transverse section: outside the vein the capillaries lying between the hepatic cells are similarly filled. The specimen was prepared by double-staining in gentian-violet and picro-carmine, the result being to dye the organisms of a deep violet, whilst the rest of the section was coloured yellowish-red. × 320.

The ailment of herbivorous animals, which is the cause of malignant pustule in man, is known by many names in different districts and countries.*

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* Anthrax, splenic fever, splenic apoplexy, black quarter, quarter evil, black leg, contagious carbuncle, black spauld, braxy. In France it is known as *charbon*, and, in the sheep, as *sang du rate*, or simply *sang*. In Germany it is called *milzbrand;* in Russia sometimes Siberian boil; and, in America, Texas fever and dry murrain.

It is now understood to depend upon the existence in the blood of a large bacillus, whose natural history has lately been very carefully studied, especially by Pasteur, Koch, Greenfield, and others.

The section, from which the illustration (Fig. 15) was made, was one of a large number prepared and examined by Dr. J. Lindsay Steven in the Pathological Institute of Leipzig, and afterwards shown at the Pathological Society of Glasgow. The tissues were obtained from the body of a rabbit which had been inoculated with the poison by Dr. Huber, assistant at the Laboratory, and which had died of anthrax. The woodcut is a good illustration of what was found in the blood-vessels of all the organs of the body, and in many places the bacilli were so numerous that they practically served the purposes of an injection of the capillaries and smaller vessels. According to Greenfield,* the bacillus, as seen in the blood-vessels, consists of a motionless, short, apparently homogeneous filament, varying in length from $\frac{1}{2500}$ to $\frac{1}{1250}$ inch, and in diameter averaging $\frac{1}{18000}$ inch. The bacilli multiply in one of two ways: (1) in the blood, they may split up into numerous rods by rapid fission; (2) by artificial cultivation they may elongate into filaments of very considerable length, in the interior of which spores develop. The rods are easily destroyed by decomposition, or by exposure to a temperature of 60°C.; the spores, however, are much more tenacious of life, in the moist state resisting a short exposure to a temperature of 100°C., and in the dry state even a higher degree of heat; they retain their vitality for years, and are not affected by ordinary changes of temperature or climate. The specimens examined by Dr. Steven were good illustrations of the fact, referred to by Koch, that the bacilli are present in greatest numbers in the capillaries, a circumstance of some clinical importance, as may be gathered from the following quotation from his work.† The bacilli were "present in incredible numbers in the whole capillary system. In the other vessels, especially in the larger ones, often only a single bacillus may be met with at long intervals, or they may be quite absent. Here, therefore, we have a striking proof of how little value are conclusions drawn in traumatic infective diseases from the examination of a drop of blood taken from a blood-vessel by chance; for one might quite readily take a drop of blood from the heart and find no micro-organisms in it, or one might readily overlook the few which might be present, and that although the capillary system abounds in them."

They appear to depend for their well-being upon the presence of oxygen; and, by absorbing it rapidly, and so robbing the red corpuscles of their supply of it, they bring about a quickly fatal result.

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* *A Dictionary of Medicine*, edited by Richard Quain, M.D., F.R.S. London: Longmans, Green & Co., 1882. p. 1303.

† "Investigations into the Ætiology of Traumatic Infective Diseases," by Dr. Robert Koch, translated by W. Watson Cheyne, F.R.C.S. *New Syd. Soc. translation*, p. 60. London, 1880.

In man the disease is never spontaneously originated; and the modes of its transmission to him are various and of great interest.

Modes of Transmission.—1. *The poison may be directly inoculated.*—This occurs, for the most part, in persons whose occupations bring them into contact with diseased animals, or with the hides, hair, wool, flesh, blood, horns, or hoofs of diseased animals. The disease has, therefore, been met with in this country (where it is of comparatively rare occurrence) principally in farm labourers, stablemen, coachmen, farriers and veterinary surgeons, shepherds, workers in hides and in horse hair, plasterers (who mix cows' hair with the plaster), wool-sorters and workers in woollen fabrics generally, upholsterers, butchers, and those occupied in slaughtering, and in skinning or buying the carcases of animals, dock labourers employed in unloading cargoes of hides, &c. Direct inoculation, as might be expected, generally leads to the formation of a pustule on some exposed part of the body. Most frequently the face, especially in the vicinity of the lip, is affected, while the hand also often suffers. I saw a few years ago a girl, who worked in a hair factory, affected with a well-marked malignant pustule on the arm just above the elbow. This case was, however, no exception to the general rule, since I learned on inquiry that she worked with her forearms and the half of her arms uncovered. Broca mentions that some workers in a leather factory developed the disease on the side of the neck, because they carried hides on their shoulders. When the poison penetrates through the unbroken cuticle, it probably does so by a hair follicle. This explains the clinical fact that, when the disease attacks the hand, it appears on the dorsum and not on the palm. The same is true of the troublesome, but, happily, comparatively harmless pustules which frequently form on the hands of surgeons and pathologists, apart altogether from abrasions of the skin. A little observation will suffice to convince any one that they always appear on the dorsum of the hand and fingers, where hair follicles abound, and not on the palm, although the latter surface is always more smeared with discharges than the former. The anthrax poison finds easy access also through the prolabium or red part of the lip, covered as it is by mucous membrane; and the liability of this locality to be the starting-point of the disease is probably greatly increased by the common habit of frequently rubbing or touching the lips with the fingers. The poison every now and again enters the system through an abrasion of the cuticle. I have notes of the case of a butcher, who skinned an ox which had died of splenic apoplexy. He was conscious of having an abrasion on the back of his hand.

A malignant pustule formed on it, and he died after a few days' illness. The life of the bacillus anthracis seems capable of being maintained for an indefinite period in the dried state. Thus, inoculation of a hair-worker in Glasgow or London may follow in consequence of teasing or cleaning the hair of a horse which has died of the disease in Russia or South America many months previously; and Rayer narrates the case of three persons who died of this affection after cleaning hair which had for years formed the stuffing of an easy chair.

2. *Eating the flesh of infected animals, or using their milk and the butter made from it.*—As might be expected, this mode of the transmission of the disease is an uncommon one, since thorough cooking, either by roasting or boiling, has the power generally, though apparently not always, of destroying the contagium; and many cases are recorded, in which members of a family have partaken of diseased flesh, but only those amongst them, who had been engaged in previously skinning and cutting up the carcase, have become affected with malignant pustule.*

The dog and other carnivorous animals eat the raw flesh with impunity; and the fact has been experimentally proved that their gastric juice is capable of destroying the poison. Milk and even butter from diseased cows have, it is well established, produced the disease in persons who have made use of them.

3. *The transmission is brought about often through the agency of flies.*—An insect (*e.g.*, a blue-bottle or gad-fly), in its flight, strikes against or settles on the face of a man, having just been in contact with some gangrenous sore on one of the lower animals affected with the disease. Its proboscis and wings are smeared with and carry the contagium; and so this dreadful malady is propagated. The fact recalls to one's mind the part which certain insects are known to play in fertilising flowers in much the same sort of way. From the circumstance that the first appearance of a malignant pustule in the human subject is very like the bite of an insect, and is always itchy and hot, the patient is apt to think that he has been stung by some venomous insect. We read now and again in newspaper columns of persons who are described as being stung, while at work in the fields, by a wasp or bee, generally about the mouth, and who die in three or four days with much swelling of the mouth and throat. These are probably often examples of the disease now under consideration, transmitted by insects, but not really the results of stings at all.

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* The fact that those who have died of charbon after eating the cooked flesh of diseased animals have also been generally more or less engaged in preparing the flesh before it was cooked, makes it very difficult to determine the point of how far cooking may be relied upon as a certain protection against the contagion.

4. *The bacillus, especially in dusty hair factories, may be inspired with the air, or swallowed mixed with food or water, and the disease is thus transmitted by internal infection.*—Much attention has been of late years directed to this form of the disease in this country by its occurrence at Bradford amongst wool-sorters. Dr. Russell, the Medical Officer of Health of Glasgow, a few years ago recorded some interesting cases of this kind which occurred contemporaneously with others of external anthrax in girls engaged in a hair factory in Glasgow.* The outbreak amongst these workers was communicated by a cargo of "raw Russian manes," which was being manipulated by them.

5. It has been doubted whether the disease can be transmitted from man to man, or from man back to the lower animals, but apparently with no good reason, since experiment has succeeded in inoculating rabbits and guinea-pigs from man, and reliable observations have been recorded of cases in which the disease has passed from one individual to another, as when wives have become infected by their husbands.

Symptoms.—At first the disease is an entirely local one. There appears, within a day or two of inoculation, a small red spot, with a black point in the centre like a flea-bite. This is hot and itchy. Vesication and swelling quickly follow, and, on the vesicle discharging, there is seen to be a dark red or black base beneath. This dries up, and so far matters appear to be insignificant enough. But very soon rapid swelling and discoloration of the surrounding tissues occur, and a crop of secondary vesicles, of small size, appears, surrounding "the central eschar like a wreath" (Bollinger), but tending soon to become confluent and to burst. The chain of lymphatic glands, in the course of the lymphatic vessels from the seat of the disease towards the thoracic duct, swell and enlarge. The œdematous swelling continues to increase and spread, and the patient complains of feeling somewhat unwell and feverish; but, at this stage, constitutional disturbance is often very slight. Pain is seldom troublesome at any time. In cases which prove fatal, constitutional symptoms supervene which indicate severe depression. There are headache, rigors, and great restlessness. The tongue is coated, the pulse quick, the extremities cold, the face livid and cyanosed. Locally the inflammatory redness often deepens into a purple or even jet-black colour, and this dead skin becomes dry and hard as a piece of stick. In many cases the symptoms become mixed up, before death, with those of pyæmia, which supervenes. Recovery occurs in many cases, and especially may this be hoped for in young persons who are early subjected to suitable treatment. Before discussing the diagnosis and treatment of this ailment, I may describe very shortly the facts of a typical case, which was admitted, in a moribund condition, into my wards in the Glasgow Royal Infirmary some years ago.

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* Supplement to the Eighth Annual Report of the Local Government Board, 1878–79.

Illustrative case of malignant pustule.—C. L., a girl twenty-one years of age, engaged as a spinner in a hair factory in Glasgow, was admitted into the Royal Infirmary, on Tuesday, the 10th of October, 1876.

The following is an account of her case, given as nearly as possible, in her mother's own words :—On Friday, 6th October, a small pimple appeared on the lower lip, near its left angle. It was black in the centre with a reddish ring outside the black like a "shilfcorn"* or a flea-bite, and had a hard root. She tried to squeeze the pimple out on the Friday night, and was constantly picking at it. It was hot and itchy, and she said she was sure it had been poisoned by the dye-stuffs used in treating the hair which she manipulated. She did not seriously complain, however, until 8 p.m. on Saturday, the 7th, when she said she felt "sick and queer," but could not tell what was wrong with her. Her mother gave her two colocynth pills. No remarkable change took place in the lip on Saturday; but during Saturday night it began to swell up "as fast as a loaf in an oven." The colour of the swollen part was bluish-red or purple, passing into black in parts. It was graphically described by a neighbour, who saw the patient at this time, as "like the ripening of black fruit." She walked about the room on Sunday, frequently examining her lip in the looking-glass. Some secondary vesicles had formed on it, and about mid-day two black stripes appeared on its inner side. The swelling, at the same time, began to pass down towards the chin, and the lower lip protruded increasingly. On Monday she remained in bed, complaining of a stitch in her left side, feeling weak, ill, and restless. The swelling had now passed up the face, round the jaw, and down over the throat and neck to the clavicles. This was her condition on admission. The lip was jet black, hard, immovable, and protruding. When struck with a pencil it sounded like wood. The skin over the cheek, throat, and neck was purple and red; while the orbits were beginning to be œdematous and swollen. A brown, fœtid discharge constantly trickled from one or other angle of the mouth; and the fœtor was diffused through the room by her quick, hard, and laboured breathing. During the night after admission she was extremely restless, constantly endeavouring to get out of bed. No rash was observed on the body at the time of admission nor until next morning, when a plentiful crop of small pustules was found on the trunk, arms, and legs, mixed with numerous purpuric and hæmorrhagic spots. On Wednesday, 11th

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* That is, a comedo. "Shilfcorn or selkhorn—a thing which breeds in the skin, resembling a small maggot." (Jamieson's *Dictionary of the Scottish Language.*)

October, the swelling was increased, one eye being quite closed. The breathing was hurried and laboured, and there were signs of extensive disorder on both sides of the chest. At night her pulse was 140, and her temperature was 104°·4. On Thursday, 12th October, the patient was sinking. The breathing was noisy and moaning in character, and the respirations 50 per minute. The body was covered with a pustular eruption. The patient passed everything in bed, and in the evening, just before she died, the temperature reached 106°. The urine was removed by catheter on the last day of her life for examination. It was very red and turbid, with amorphous urates, and highly acid. It contained albumen; and, on being boiled and acidified, the precipitate amounted after twelve hours to about two-thirds or more of the bulk operated on. Under the microscope there were seen a little scaly epithelium, amorphous urates, and numerous tube-casts. No distinct red blood-corpuscles could be recognised; but, with the guaiac test, a faint blue reaction was obtained. On *post-mortem* examination it was found that both pleuræ had been acutely inflamed. Copious layers of soft lymph covered them, and in some of the organising lymph there had evidently been effusion of blood from the small vessels. The left lung was everywhere of a dark red colour and non-crepitant; presenting a feeling of solid resistance. The right lung was also dark red in colour, but subcrepitant everywhere. There were in this lung several small solid masses of mottled-red colour on section, triangular in shape, about the size of walnuts, and situated mostly near the surface. Here and there in the kidney were similar masses about the size of split peas. The spleen was pulpy and of a light plum colour. In the cellular tissue behind the gullet was a hæmorrhagic effusion. The intestines were normal, except near the ileo-cæcal valve, where the mucous membrane of the ileum was the seat of numerous minute, round, clear, raised dots, like enlarged solitary glands. The lip, hard and baked-like in appearance, creaked under the knife when cut. All the veins in the tissue of the lip and chin were full of pus; but none was found in the jugular veins. The other organs and parts of the body were fairly healthy.

It will be observed that there were present in this girl all the local signs of a well-marked malignant pustule, which, however, was not seen until far advanced and accompanied by much sloughing and extensive inflammatory œdema. It was also already complicated on admission, as it is always apt to be when much sloughing attends the local lesion, with a secondary pyæmia, as evidenced by the general pustular cutaneous eruption, the double pleurisy and the pulmonary consolidation. This was still further evidenced, *post-mortem*, by the existence of pus in the veins of the lip and by the infarctions found in the lungs and kidneys. The *bacillus anthracis*, not looked for in the blood during life, was discovered easily in that fluid after death.

The disease occurs in another external form than that which has been described above. This is characterised by the inflammatory œdema alone, the pustule and black eschar being absent, while vesication is less regular in its appearance. It usually affects the region of the orbits and is extremely rapid in its increase. It has received the names of anthrax œdema, *œdème malin*, anthrax erysipelas, and malignant œdema. It is pathologically identical with malignant pustule.

Diagnosis.—In countries where anthrax is epidemic amongst the lower animals, the diagnosis of the disease, at least in its external form, must always be comparatively easy. But in this country the very fact of its rarity is apt to make us, at first, overlook its real character. If the filaments of the bacillus be discovered, by the microscope, in the serum of the vesicles, this makes the diagnosis of charbon conclusive; but their apparent absence, especially in the earlier stages of the disease, must not be held as proving the contrary. In anthrax œdema the bacillus may be searched for in the subcutaneous serum and in that of any vesicles which may be present. The following points, in addition to careful noting of the symptoms of the case, require attention in arriving at a diagnosis:—(1.) The occupation of the patient. (2.) The disease is most common in youth and vigorous middle life. In this respect it differs from ordinary carbuncle. (3.) The patient is very generally under the impression (as in the case I have detailed) that the part has been poisoned or that it has been stung by some insect. (4.) The seat of the lesion is usually on a part of the body uncovered by clothing, and most often on the face and hands. Ordinary carbuncle is most common on the back of the neck if it occurs on a habitually uncovered part of the body, although a very malignant and fatal form of it is described as occurring on the face, and it is said to have nothing in common with malignant pustule. To this reference has been already made in the section on carbuncle.

Prognosis.—It seems undoubted that, if the disease be seen early and be removed while still local, recovery will in all likelihood follow. Its early recognition and energetic treatment are, therefore, of the first moment, and so it comes about that the statistics with most recoveries are presented by those districts and countries where the disease is well-known both by the public and the medical profession.

Treatment.—There seems a complete consensus of opinion that the only real safeguard against a fatal result is an early, free, and complete extirpation by the knife of the local affection, followed by free cauterisation with undiluted carbolic acid. The destruction of the affected part by *potassa fusa* has also been recommended as a successful method of arresting the progress of the disease. Radical treatment of this kind has been found successful even after general constitutional disturbance has commenced, the cauterisation being frequently repeated. Internally large doses of quinine and carbolic acid (fifteen grains of the former and thirty of the latter in the course of a day) have been given with apparent advantage. Incisions have been practised also through the surrounding œdema, and the wounds thus made treated with carbolised dressing. It has been suggested to keep the patient on an exclusively animal diet, on account of the known freedom which carnivorous animals enjoy from the disease. It seems doubtful how far this is likely to be beneficial. But the food should be nourishing, abundant, and easy of digestion, and may, in most cases, be advantageously combined with wine or other alcoholic stimulant.

XIX. DELHI BOIL.

By James Christie, A.M., M.D.

Delhi boil or sore (Furunculus Delhinus) seems to be identical with Scinde boil, Aleppo evil, Biskra bouton, bouton de Crete, and several other allied affections which have local names. Some authors maintain that such affections are either syphilitic, or are modified forms of lupus; but this evidently arises from the fact that the diagnosis by natives is often imperfect, and that cases of syphilis and of lupus are often classed under the prevalent local disease. There can be no doubt that the disease is altogether *sui generis.*

Delhi sore, though still endemic within that city, is prevalent in many localities in the East, as Garzebad, Jeypore, Scinde, Lahore, Moultan, Agra, Aden, Meerut, Roorkee, and Umballa; and the Aleppo evil, the Biskra bouton, and the bouton de Crete, are common in the localities whence they derive their names. The disease, though of most frequent occurrence in the human subject, is also found amongst the lower animals, and more especially in the horse and dog, the tip of the nose being the part most frequently affected.

Symptoms.—The disease commences with itching, followed by the appearance of a reddish spot, which has been described by Dr. Fleming as resembling "a mosquito bite with the skin slightly elevated. On examination, a number of blood-vessels are seen radiating from the centre of this little red spot, which gradually enlarges without any pain, throws off its epithelium, becomes smooth and flat on the surface, and assumes a shining appearance and a relative degree of transparency. The growth slowly increases in size, and often spreads irregularly to a considerable distance from the centre by little ridges of smooth skin;

and it would appear first to attack the roots and sheath of the hair whilst it is extending. The growth, or any of its prolongations, pits on pressure, and causes a stinging sensation, contrasting with the healthy skin around."

At this stage of the disease, the surface is studded over with deeply-seated, yellowish-white points, which are altered and inflamed hair and gland sacs; an ichor is discharged from the soft centre of the tumour, which results in the formation of a scab; and, if the boil or sore be irritated, ulceration begins beneath the scab. Healing may take place without ulceration; but, as a general rule, ulceration goes on beneath the crusted pustules. The sore is surrounded by a red zone; papules are developed around it; it enlarges by ulceration; the surface is red, flabby, irregular, and studded over with fungoid granulations that bleed freely; it is painful, discharges a thin ichor, shows no tendency to heal for a considerable time, and its edges are hard. The healing process generally commences while the ulceration is advancing, and it appears first in the centre of the original seat of the disease, the cicatricial tissue gradually extending farther and farther outwards. The sore generally heals after two or three months, a cicatrix being left behind.

Delhi sore, Aleppo evil, and Biskra bouton have all their essential symptoms in common. They all attack the exposed parts—viz., the back of the hands, the uncovered parts of the legs and arms, the dorsal surfaces of the feet, the nose, cheeks, and ears; they all last from several months to a year or more; they attack all ranks, ages, and classes, but especially new comers after a few months' residence. They are specially prevalent after the rainy season; there is but little disturbance of the general health; and they have frequently a long period of incubation. At Delhi the disease is distinctly endemic within the city walls, but not in the suburbs, a fact which indicates local foci of propagation.

Morbid Anatomy.—In 1868, Surgeon-Major Smith, as the result of microscopic examination, described the presence of "a large number of peculiar bodies, varying in shape from an elongated oval to that of a kidney or crescent form," of a dark brown colour as seen by transmitted, and of a bright orange-red as seen by reflected, light; they had cell walls, and were fitted with minute dark granules, and varied in transparency; they were found in the discharges and all over the skin. Their size was, in length, from 5 to 6 blood discs, by about 2½ to 3 in width. Other cells were found, resembling *distomata*, full of granules, in some cases; and, in others, having one end transparent, as though "being thinned by protrusion, and consequent tension, at the moment when the spots were first distinctly visible." Dr. Fleming, in 1869, described the normal structures as being replaced by a fibro-cellular tissue, enclosing in its interstices a large number of cells in masses, the sebaceous glands and sweat glands being destroyed as well as the papillary layer of the skin. Before ulceration had commenced, these cells made up the chief part of the sore. The cells are oval or roundish, and yellowish-brown, the cell wall being soon destroyed by pressure, and they contain two or more nuclei; they are regarded as the essential and peculiar growth of Delhi sore. The hairs also are described as being the seat of cystic formations, the epithelial layer being so arranged as to appear like a fibrous envelope enclosing a finely-granular matter. In 1876 Dr. Vandyke Carter described the morbid anatomy of the bouton de Biskra, which he regards as identical with Delhi sore. A few days after the appearance of the bouton, it was found to be composed almost entirely of a granulation tissue, resembling that of which several tumours of the skin were known to be formed. There was a parasitic organism, consisting of spheroids and mycelium, occupying the distented lymphatic vessels in and around the bouton. The mycelium was arranged in open and angular meshes, the free ends of the delicate filaments giving off gonidia, which might so multiply and accumulate as to reproduce, as it were, a second micrococcoid mass, not unlike that in which the original filaments probably arose. At a subsequent stage, these vegetable organisms seemed to disappear; and there were found—besides pale, round, and stellate granulation cells—numerous bright, orange-tinted particles, arranged as spherical or ovoid groups, almost everywhere disseminated through the tissues of the tumour. He was under the impression that these tinted bodies represented a terminal or fructificational stage of the previous fungus; and that they were situated in the ramifications of the lymph channels of the parts affected. He pointed out that the endemic limitation of the disease, its seasonal occurrence, incubation period and limited duration, its multiplicity of local manifestations, its inoculability, and other characters were explained on the hypothesis of its parasitic origin; and he proposed for the disease the term *mycosis cutis chronica.*

In 1877, Drs. T. R. Lewis and D. D. Cunningham, of the Indian Medical Service, reported on Delhi sore, and gave the following as a summary of their investigations:—

1. There is no evidence of any parasitic agency in the production of the disease; and it appears probable that the deleterious effects are due to the chemical constituents of the water, which is remarkable for its extreme hardness.

2. It seems probable that, although the salts which cause the hardness of a water may of themselves not be actual deleterious ingredients, nevertheless this quality may serve as an index of properties in it which tend to favour the production of cutaneous disorders. Several

salts exert a peculiar action on the skin; those of iodine and bromine, for example, produce various characteristic symptoms.

3. The special skin affection in question is in no way distinguishable from lupus. Its clinical history is similar, as is also its morbid anatomy; and the treatment which has proved the most satisfactory is that which is most generally recommended for lupus.

4. The tendency which this form shows to become endemic may be taken advantage of for the purpose of nomenclature, and this form of Oriental sore may, therefore, be designated *lupus endemicus.*

Dr. Cunningham, in 1885, made further investigations "On the presence of peculiar parasitic organisms in the tissue of a specimen of Delhi boil."* These investigations were conducted with great care, and by means of the most recent appliances. The specimen was a boil which had not reached the stage of ulceration. The essential feature, in the diseased area, was clearly shown to consist in an accumulation of lymphoid and epithelial cells amongst the normal tissue elements. Sections were stained with various reagents; but, in none of them, save those stained with Gentian violet, did any structural features manifest themselves beyond those described. In these, however, large numbers of peculiar violet, or blue, bodies appeared conspicuously among the surrounding, almost colourless, masses of lymphoid elements. There can be no doubt, he says, that in this specimen these peculiar bodies are generally distributed throughout the entire extent of the morbid tissue, and that the numbers of those present, in particular areas, correspond generally with the degree to which the morbid process has advanced.

Dr. Cunningham thinks that the data which have been attained as the result of his examination, show that the diseased processes may certainly be associated with, and possibly caused by, the presence of peculiar parasitic bodies. In regard to this, however, it appears to be quite possible that such bodies may constitute one of the factors in the production of the disease without necessarily constituting its only cause.

In 1884, MM. Duclaux et Heidenreich † investigated the microbe of the Biskra bouton. The matter experimented with was from a patient suffering from the disease. In the first series of experiments rabbits were inoculated, the result being an inflammation of the skin resembling that observed in man. In a second and third series of experiments, the microbe had been isolated by cultivation in a neutral veal broth.

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* *Scientific Memoirs by Medical Officers of the Indian Army.* Calcutta, 1885.

† "Etude d'un microbe rencontré chez un malade atteint de l'affection appelée clou de Biskra," par MM. Duclaux et Heidenreich. *Archives de Physiologie*, anot 15th. No. 6, p. 106. 1884.

Injections made under the skin with bouillon of recent cultivation (twenty-four hours to three days) set up gangrene of the skin; with bouillon kept ten days there was a more circumscribed sloughing; with bouillon kept twenty-five to thirty days there was merely a small abscess: with fluid kept for two months the results were negative. Intra-venous injections were also made with analogous results. The experiments were interesting, but the results can scarcely be regarded as conclusive.

Treatment—*Preventive.*—Attention should be paid to general sanitary conditions, avoiding contact with the disease in men or animals, and the use of pure drinking water and good food.

Curative.—Dr. Fleming recommends that, as soon as the disease is recognised in the form of a small, flat, reddish-brown growth in the skin, strong nitric acid, or potassa fusa, should be applied over the surface. It may be necessary to repeat the application several times; and the ulcer should then be treated on ordinary principles, as it will soon assume a healthy appearance and rapidly heal. Arsenical preparations have also been administered internally with beneficial results. Nutritive diet with tonics should be prescribed, and change of locality, or at least change of drinking water.

XX. PARANGI.

By James Christie, A.M., M.D.

This disease, which seems to be peculiar to the natives of Ceylon, is said to have been prevalent there for centuries. Its symptoms were described by Dr. Loos in 1868, and by Dr. Dunforth in 1873. In 1879 instructions were issued by the Legislative Council for the systematic investigation of the history, nature, and affinities of the disease; and the reports of the various medical officers formed the basis of an account of it by Mr. W. R. Kynsey, the Principal Civil Medical Officer of Ceylon.

Parangi is there defined as "a specific disease, produced by a variety of causes, all contributing to debility of the general system, and traceable to poverty, innutritious food, impure water, and residence in unsanitary dwellings in malarious localities; propagated by contagion, generally through an abrasion or sore, but sometimes by simple contact, without any solution of continuity being present or recognisable; marked by an ill-defined period of incubation, by certain premonitory symptoms referable to the general system, by the evolution of successive crops of a characteristic eruption, passing on in severe cases and in weakly subjects into unhealthy and spreading ulcers, whose cicatrices are very prone to contraction; running a definite course; attacking all persons irrespective of age; and amenable to appropriate treatment."

Ætiology.—The ætiology of the disease is still obscure; but the *materies morbi* undoubtedly exists in the discharges coming from the eruption and ulcers, and there is reason to suppose that the *origo mali* has some connection with a polluted water supply.

Geographical Distribution.—There seems to be a unanimous consensus of opinion that the distribution of the disease, in the island, is co-extensive with an impure water supply. The tanks, as a rule, furnish all the water needed for the various uses to which man subjects it; and the quality of the water is so equivocal as to have arrested the attention of all engaged in the study of parangi. The setting in of the wet weather is generally the prelude to a fresh outbreak, and to an aggravation of pre-existing cases; and it is conjectured that the tank-water is disturbed during the downpour, or that some malarial poisons are then set free. The disease is chiefly, though not exclusively, confined to the poorer classes, whose habits and customs are extremely filthy; who inhabit small, dingy, unventilated buildings; and whose food is innutritious and deficient, especially in nitrogenous elements.

Symptoms.—During the *first stage*, or incubation period, which varies from two weeks to two months, there are no peculiar phenomena; but the distinct appearance of the disease is nearly always preceded by an ulcer generally situated above some bony prominence, and caused by scratching. Shortly before, or during, the healing of this initial sore, the symptoms of the second stage declare themselves. This is ushered in by slight pyrexia, accompanied by a feeling of *ennui* or *malaise*, and pain in nearly all the joints, described as a dull, running, or shooting pain. The premonitory fever terminates with the evolution of the eruption in a period varying from two to seven or eight days. During the *third stage*, the characteristic eruption appears generally in successive crops, the first on the face, the next on the body, and the last on the extremities; but in some cases the order is reversed. It has also been noticed that the first eruption frequently appears around the cicatrix of the original sore, and thence extends to the trunk and extremities. This stage terminates with a complete resolution of the disease, its average duration being about six months, or by its transition into the *fourth stage*, that of sequelæ. The duration of this stage is indefinite, and may be prolonged to two, six, or eight years. After the pyrexial stage, the disease exercises very little influence on the general health, unless as regards its sequelæ, which are described as being frequently horrible. It is doubtful whether an attack secures immunity; but a thorough cure renders a recurrence doubtful. Mr. Kynsey says that the diseases which it resembles are syphilis in its varied manifestations, lupus, leprosy, and frambœsia or yaws—its most striking resemblance being to the last, the history of both being identical, and the minor points of dissimilarity being easily accounted for by ascribing to the climate and surroundings generally some modifying influence.

Characteristics of the Eruption.—The cutaneous eruption is described as being frequently *squamous*, accompanied with fissures of the skin, which become the seat of ulcerations; or it may exhibit the appearance of inveterate *lepra* or *psoriasis;* or it may be vesicular, pustular, or pustulo-tubercular, and covered with an elevated scab, as in *rupia*. These varieties may be seen together, in the same case, it being impossible to determine which appeared first. The body and limbs are generally the seat of numerous superficial ulcerations running into each other so as to form extensive sores: they commence in the cracks of the squamous surface, or in the seats of the pustulo-tubercular eruption; or they originate from the breaking of boils or small indolent abscesses; they are irregular in shape, but generally circular, with raised edges, an uneven surface, the discharge being scanty, thin, and ichorous. It frequently happens that, as the ulceration is healing in one part, it is spreading in another. In children especially, ulcerations at the juncture of the skin and mucous membrane are common; and condylomata around the anus are frequent.

Dr. Danforth thus describes the sequelæ:—"At last, symptoms of a formidable nature supervene, and all sorts of deformities occur. The nose, palate, and cheeks ulcerate; the nodes terminate in caries; the globular subcutaneous tumours soften and break; the fingers and toes mortify; the hands and feet lose their sensibility, while pricking pains are often felt in them; the feet enlarge by the thickening of the tissues, and blebs of various sizes form on them, and lead to obstinate ulceration. The surface of the body acquires a peculiar earthy colour and a glazy appearance. Not unfrequently it is covered by dry scaly epidermis. The patient may finally sink from exhaustion; or from diarrhœa, or some attack of pulmonary disease."

Treatment.—Dr. Danforth states that the disease is improved by the observance of good hygienic rules; that mercury is of the greatest service in the disease, under cautious management; that many cases have been relieved by the employment of perchloride of mercury, in conjunction with iodide of potassium and sarsaparilla. He states that the natives believe the disease to be venereal, and he proposes to call it the "Vanin plague."

XXI. DONDA NDUGU.

By James Christie, A.M., M.D.

Donda Ndugu (Brother ulcer; or, an ulcer that clings to one like a brother) is a disease common on the east coast of Africa; and, probably, throughout Central Africa. It was first described by me while resident in Zanzibar in 1866; and is probably the same disease as that described by Dr. Livingstone in his *Last Journals*, and from which he himself suffered long at Bambarre in 1870. He says, regarding his own case:—"I extracted twenty funyés, an insect like a maggot, whose eggs had been inserted on my having been put into an old house infested by them. As they enlarge, they stir about, and impart a stinging sensation; and, if disturbed, the head is drawn in a little. When a poultice is put on, they seem obliged to come out; they can be pressed out, but the large pimple in which they live is painful. They were chiefly on my limbs. The sores on my feet laid me up as irritable, eating ulcers. If the foot were put to the ground, a discharge of bloody ichor flowed, and the same discharge happened every night with pain that prevented sleep. The wailing of the slaves, tortured with their sores, is one of the night sounds of a slave camp; they eat through everything, muscle, tendon, and bone, and often lame permanently, or cause death. Irritable ulcers fasten on any part abraded by accident, and it seems to be a spreading fungus; for the matter settling on any part becomes a fresh centre of propagation. The vicinity of the ulcer is very tender, and it eats frightfully if not allowed rest." Dr. Livingstone was completely disabled from these ulcers for three months in the Manyuema country.

The disease is common to all classes of natives; but it is of most frequent occurrence among slaves who have been marched towards the coast during, or shortly after, the rainy season. It is also met with among the native outdoor labourers in the rural parts of the island of Zanzibar. The disease is invariably confined to the lower extremities, and is never met with above the knee, nor on the hands or arms. The most common sites are the lower third of the leg, near the origin of the tendo-Achilles, the upper part of the heel, the dorsum of the foot, and the toes. It is thus always situated about the parts exposed while the natives, with bare feet and legs, are travelling through mud and water.

Ætiology.—The primary cause of the disease is somewhat obscure; but it is highly probable that some minute organism, which infests stagnant water, gains access to the parts affected through an abraded surface, a pimple, or a sore. The maggots extracted by Dr. Livingstone, from his own foot, were probably the result of the deposit of the ova of a fly.

The period of incubation is uncertain; but it is much shorter than that of guinea-worm disease, an affection which it somewhat resembles.

Symptoms.—The disease is not often seen by the European practitioner during the first stage, as advice is never solicited until the sore appears in the form of a large slough. I had opportunities, however, of seeing some cases before the skin was broken. The patient did not complain much of pain, but walked lame; and the pain complained of was not nearly so great as in a boil or deep-seated abscess. Close to the juncture of the gastrocnemius and the tendo-Achilles, there was a puffy swelling, not very apparent except on close examination. There was no unnatural heat of surface, but rather the reverse; and one or two whitish pimples were observed on the surface, near the centre of the swelling. To the touch, it resembled a chronic abscess: but it had more of a boggy feeling, and no hard, well-defined edges could be detected. Having long waited for an opportunity of seeing a case at this early stage, and having a strong suspicion that the disease was caused by the deposition of the ova of some insect, I resolved to open it in the expectation of finding some trace of a worm in connection with the pimples on the surface; but in this I failed. The incision simply revealed an extensive slough, deep-seated, and burrowing beneath healthy tissues. There was some ichorous discharge which had to be washed out. The case was instructive, as it explained how a patient, not previously under treatment, might suddenly present himself with a large, open, sloughing sore. In severe cases, the disease advances with wonderful rapidity; the muscles appear as if they had been dissected out; tendons are laid bare; and the bone is stripped of its periosteum. When the slough is exposed, the pain is intense; death frequently follows from extreme exhaustion, in some cases from hæmorrhage; while those who recover are generally permanently lamed.

Treatment.—As the disease is purely local, and almost certainly of a parasitic nature, the treatment is local, in the form of applications of an antiseptic character, such as carbolic acid.

XXII. DERMATITIS MEDICAMENTOSA.

(Medicinal rashes.)

The administration of certain drugs has a tendency to bring out eruptions whose ætiology is apt to be overlooked, and which are therefore likely to be mistaken for diseases of the skin. For this reason it is important to call attention to the more prominent of them, so that errors of diagnosis and treatment may be avoided. Some persons seem to be peculiarly prone to them, for reasons of which we are for the most part ignorant, although it is said that the pustular forms have a special tendency to appear in those who have coarse, oily, skins. Certain diseases, too, especially renal affections, by their interference with free elimination, are likewise favourable to their occurrence.

Antipyrin occasionally gives rise to cutaneous manifestations which are usually of a measly character, and accompanied by itching, but without desquamation. An erythematous rash, too, has been met with by Cahn, which may be widespread, but which may be confined to the dorsal aspect of the limbs. An urticarial, and more rarely, a purpurous or bullous, eruption has also been observed. It is not generally necessary to suspend the use of the medicine on account of these eruptions, unless they are accompanied by vomiting, collapse, or other threatening symptoms.

Arsenic, when given in full doses, often produces a puffiness of the hands, and of the face, especially about the eyes, which feel itchy and are inclined to water. The skin becomes dry, and brownish in tint, while, on covered parts especially, a pityriasis-like branny desquamation makes its appearance. An erythematous rash, too, is not uncommon, especially on the face, neck, palms, and soles, and in the last situations this may be followed by great thickening and induration, which has at first a papulated character, beginning, as it does, around the sudoriparous follicles. A similar induration may also occur over the elbows and knuckles. In rare cases an urticarial, eczematous, or purpurous rash is observed, while it is well known that during the administration of the drug the patient is very apt to be attacked by zona, a circumstance to which Hutchinson has specially called attention. In almost all cases the tongue becomes sooner or later coated with a silvery fur, with which the practitioner should be acquainted, else he might suppose that it was an evidence of digestive derangement.

Belladonna—as well as its active principle *atropia*—has a tendency not only to produce dryness of the throat, dilatation of the pupil, and arrest of perspiration, but also to give rise, especially in children, to a scarlet rash. It is most marked, as a rule, upon the face, neck, chest, and around the joints; but sometimes it is universal, is accompanied by more or less fever, and is followed by desquamation, so as to resemble an attack of scarlatina. The same result may ensue from its external application, and my late colleague, Dr. J. G. Wilson, reported a case in which the application of the extract to the breasts produced dilatation of the pupils, redness and dryness of the throat, and a universal red rash.

Bromides.—When these (especially the bromide of ammonium) are administered for some time in full doses, the sebaceous follicles often become inflamed, thus producing an eruption whose characters are somewhat similar to those of acne, and which occupies by preference the same localities—viz., the face, front of the chest, shoulders, and back. For this reason the use of the bromides has been recommended in the treatment of acne on the principle, I presume, of "similia similibus curantur." Occasionally the eruption is confluent, and then, as Radcliffe Crocker has remarked, the aggregation of pustular points on a raised red plateau, too soft for a carbuncle, and comparatively painless, renders the diagnosis possible from everything but the similar iodide eruption. It is more likely to occur in women than in men, and has a preference for those who have coarse, greasy skins. It is well to know, however, that it may frequently be prevented by giving arsenic along with the bromide, a combination which is often to be recommended upon other grounds, seeing that many of the diseases for which bromides are given are likewise benefited by an arsenical course. According to Erlenmeyer,* too, the acne caused by one of the bromides disappears on substituting for it one of the others; and the eruption is less likely to appear if the bromides of potassium, sodium, and ammonium are combined. The acneiform spots occasionally assume a distinctly furunculoid character, or a more diffuse subcutaneous suppuration may occur, and sometimes bullæ or even eczematous eruptions are developed. Voisin has described a peculiar eruption as having occurred six times amongst ninety-six epileptics who were being treated with bromides. "It appears in the form of *oblong or roundish swellings on the lower extremities, of a rose or cherry red colour,* which then become yellowish, in consequence of certain millet-seed-like yellow prominences appearing upon them, which latter are aggravated acneiform pustules. These roundish swellings have a kind of depressed umbilicus in the centre; their base is very hard; they are unaccompanied either by swelling of the lymphatic glands, or by feverish symptoms. It is seldom that more than two or three of these swellings are observed on a patient at one time. They are very painful on movement, only their centre is insensible (even to pricking, cold, &c.) The pains are so severe that the patients are unable to move the legs. Voisin relates the cases of two women who, on account of this last symptom, could not leave their rooms for several months. These swellings disappear when the fluid they contain trickles out; but this only occurs very slowly, the time varying from a month to a year; then the swellings become covered with thick scabs, which remain until the tumefaction no longer exists; when they have disappeared, persistent yellow scaly patches remain. These swellings sometimes become developed very rapidly, in three or four days, and they occur more frequently in winter."*

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* *Centralblatt für Klin. Med.*, 31st Dec., 1884.

Cinchona (as well as its alkaloids, quinine, &c.), besides its well-known tendency, especially in large doses, to produce ringing in the ears and deafness, and to check perspiration, may give rise to an erythematous eruption closely resembling that of scarlatina. It is apt to be preceded and accompanied by nausea, vomiting, headache, and fever. It commences upon the face and neck, and then spreads down over the trunk and extremities, thus agreeing with the scarlatinal rash in the way in which it spreads, but differing from it in that the face is usually implicated. Along with it there is a good deal of heat and itching, and it is often followed by desquamation. In other cases the eruption more resembles that of measles than scarlatina, and occasionally it is urticarial, bullous, or purpurous in character. Even small doses of quinine may produce these untoward results in those who are very susceptible to its influence. "A small dose of quinia," says Ringer, "in one of my patients always brings out a uniform red rash over the whole body, most marked on the back of the neck, accompanied by very severe stinging pain, especially on the nape, and in the clefts between the fingers. Desquamation, as free as after a sharp attack of scarlet fever, always follows the rash. In some people quinia produces large patches of erythema with great irritation, gastric disturbance, and accelerated pulse. A patient tells me that even small doses always excite violent urticaria, her face swelling till she can scarcely see out of her eyes. She is so intolerant that a quinine hair-wash brought out a crop of urticaria on her head, and a tooth-powder, containing a small quantity of quinine, caused her lips and gums to swell."†

Chloral hydrate, when administered for a long time, or in large doses, occasionally gives rise to an eruption not unlike that of scarlet fever, which is accompanied by a good deal of itching, and which may be followed by desquamation. It is oftenest observed on the face, neck, and chest, and, next to these parts, on the hands and feet and around the joints. On the extremities the eruption may assume a papular character, and purpura spots and patches have been observed with or without hæmorrhages (purpura hæmorrhagica).

Copaiba and *cubebs*, especially the former, have a great tendency to produce a rash, even when a small quantity has been administered. The nature of the eruption may be at once suspected, if we learn that the patient is taking the drug, or is labouring under a disease for which it is usually prescribed, or if the urine presents the characteristic odour of copaiba or cubebs. It usually sets in with loss of appetite and slight fever, which disappears when the eruption is fully out. It varies a good deal in character in different cases, but most frequently it assumes the shape of round erythematous, slightly elevated blotches, which are bright red and very itchy. It rapidly spreads, and often covers almost the whole body, although the hands and face are, as a rule, most markedly implicated, and, in very acute cases, it may be accompanied by œdema: it disappears a few days after the medicine has been stopped, and leaves no trace behind.

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* *Skin Diseases*, by Tilbury Fox, M.D., London. Third edition, p. 134. London: Henry Renshaw, 1873.

† *A Handbook of Therapeutics*, by Sidney Ringer, M.D. Eighth Edition, p. 577. London, H. K. Lewis, 1880.

Iodine.—Some persons are able to take iodine and the iodides for a lengthened period of time, and in large doses, without any inconvenience, while others are very susceptible to their influence, and the "phenomena of iodism" are speedily manifested. The first indication of these usually is congestion of the nasal passages, frontal sinuses, and conjunctivæ. There is sneezing, "running at the nose," slight frontal headache, and suffusion of the eyes with lachrymation. This may be followed by redness, and even œdematous swelling around the eyes. The nose also may be red and swelled, especially towards the point, and an erythematous rash frequently makes its appearance, especially on the neck and forearms. But the most common form of eruption is of an acneiform character. It, however, so closely resembles in appearance and in seat that due to the administration of the bromides (see p. 362) as to render further description unnecessary.

In some cases a bullous eruption makes its appearance, especially upon the head, neck, and arms, though other parts, including the mucous membrane of the mouth, may be involved. This rash—as Dr. J. Nevins Hyde * has observed—begins as pin-point vesicles, or shot-like papules, on the summits of which vesication occurs; these increase in size, and blebs form, the contents being at first serous and clear, later purulent, or even bloody. Sometimes the eruption so closely resembles hydroa (see p. 282) as to have suggested to Hutchinson the name of iodide hydroa. In a few cases purpura spots make their appearance, especially on the lower extremities. These are sometimes very minute, but occasionally they are of large size; indeed, all the symptoms of purpura hæmorrhagica have been observed, a condition which has been known to terminate fatally.

Opium and morphia, as is well known, very frequently induce perspiration, especially when administered subcutaneously, although this may generally be prevented by the addition of atropia. Thus, the addition of $\frac{1}{120}$th of a grain of sulphate of atropia to a $\frac{1}{4}$ of a grain of sulphate of morphia administered subcutaneously is often sufficient. This perspiration may be followed by an eruption of sudamina, for a description of which the reader is referred to the section on that subject (see p. 90). But, apart from these more usual results, an urticarial, or an erythematous rash, not unlike that of scarlatina, may be developed, which is very itchy, and terminates in desquamation in from ten days to a fortnight.

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* *Archives of Dermatology*, October, 1879, p. 333.

Pyrogallic Acid.—I have very little experience of the internal administration of this drug, but I am aware that, if freely applied to an extensive surface, it gives rise to symptoms very similar in character to those about to be described as sometimes following upon the use of tar, and, in one case of psoriasis, treated by me in the Western Infirmary of Glasgow two or three years ago, the symptoms were so serious that for some days a fatal issue was feared. Indeed, several fatal cases have been recorded. Thus, Neisser reports the following:—"The patient, a strong man, aged 34, attacked with universal psoriasis, two hours after one-half of his body was rubbed with rhubarb ointment (for comparison) and the other with pyrogallic acid ointment, felt himself very uncomfortable; then followed shivering, malaise, vertigo, collapse, torpor, coma. The temperature was 104°·2 Fah.; pulse, 96 to 120; urine very dark, free from albumen. Shortly before death, which followed in 84 hours, the urine—which during the whole duration of the illness only amounted to 1,600 cubic centimetres—showed the highest degree of hæmoglobinuria. The *post-mortem* examination confirmed the diagnosis of dissolution of the blood." In consequence of this case he instituted a series of experiments upon animals, which showed that rhubarb—as well as chrysophanic acid—is harmless, but that pyrogallic acid is highly poisonous. "In small doses it is decomposed by the alkaline blood and absorbs a part of the loosely combined oxygen with discoloration of the blood. In larger doses it destroys the red blood-corpuscles, changes the character of the blood, so that circulation becomes impossible, causes hæmoglobinuria with formation of pigment cylinders in the urinary tubes, and often in this way rapidly produces death. The anuria resulting from the obstruction of the urinary tubes is too short in duration to make death from accumulation of the injurious urinary elements a possible contingency, but the closure of many uriniferous tubules favours the retention of the pyrogallic acid in the system, and thus increases the toxic effect. On this account diuresis must be excited as much as possible, and, in case of need, the damaged composition of the blood be repaired by transfusion." *

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* Quoted in the *London Medical Record* (1880, p. 49), from *Zeitschrift für Klin. Med.* Band 1, 88.

So much impressed have I been with the danger of pyrogallic acid when used incautiously, that I never prescribe it when a large extent of surface is involved, and never give a prescription for more than an ounce of a 10 per cent. ointment, warning the patient at the same time not to repeat it without further advice.

Tar.—The internal administration, no less than the application of tarry preparations to an extensive surface (including creosote and carbolic acid), produces in some persons well-marked constitutional effects. The patient becomes feverish, there is often giddiness and oppression in the head, and nausea, vomiting, and diarrhœa are common, the matters vomited and the motions being black and tar-like, and smelling of tar. But the most frequent symptom is the passing of urine which has a deep olive-green or even black colour. It smells also of tar, and this is rendered more striking by the addition of a few drops of sulphuric acid, while a beautiful blue tint results from the addition of chloride of iron. These symptoms are rarely all present in the same individual, but in very pronounced cases they lead to considerable emaciation and debility. I have never known them, however, to terminate fatally, and they are generally relieved by the free use of diluents, and of other remedies which act upon the kidneys and other organs of excretion.

It is stated in some works that the internal administration of tar may produce an erythematous inflammation of the skin which may be very extensive, and accompanied by a good deal of swelling, and the development even of vesicles and bullæ—an acute dermatitis in fact: also that the hair follicles are apt to be the seat of inflammation leading to the formation of papules at their orifices, with a black tarry point in the centre of each, so that the eruption might be mistaken for one of acne. These results of the use of tar are by no means uncommon, but they follow the application of tarry preparations to the skin, not their internal administration. The latter form of eruption, at all events, is the result of local treatment, and was very appropriately termed "tar-acne" by Hebra. It is distinguished from acne vulgaris by its following the application of tar, by its appearing at the parts only where it has been applied, and by the black tarry point in the centre of each papule, which cannot be expressed like a comedo.

A scarlatiniform eruption is also occasionally observed in those who are taking *digitalis, stramonium, strychnia,* or *salicylic acid,* and the last has been known also to produce a purpurous rash. Hasse has recorded the occurrence of a bullous eruption as the result of a course of *phosphoric acid,* which disappeared when the drug was omitted, and recurred when its use was resumed.

Some state that they have observed cutaneous manifestations result from the internal administration of *mercury.* I have, however, never met with a case of this kind, and am of opinion that the so-called "eczema mercuriale" only occurs as the result of irritation due to the local application of the drug.

In all cases in which the administration of a medicine produces an eruption, the diagnosis is aided by the fact that the drug is being, or has recently been, administered, that it does not make its appearance until after the medicine has been commenced, and that it ceases when its use is suspended.

XXIII. DERMATITIS CALORICA.

(*a.*) Dermatitis ambustionis (*Burns and Scalds*).

By H. C. Cameron, M.D.

By a *burn* is understood such injury as is produced by the application of fire or hot metal to the body; a *scald* is that which is occasioned through the medium of hot liquids of any sort. In slight cases the results are very much alike, but a severe burn necessarily produces destructive effects which are readily distinguishable from those of any scald. The smell of the charred and singed tissue and the complete destruction of the hairs are, further, characteristics only of the former.

Causes.—It would be vain to attempt an enumeration of the causes of burns and scalds, which are amongst the most common of the accidents which occur in civilised life, alike in the domestic circle and in the busy outside world. It may, however, be useful to point out here one or two causes of burn and scald, for which either nurses or medical practitioners are frequently more or less responsible, and against which they always should be on their guard. Hot bottles or bricks are frequently put in contact with paralysed limbs, or with the skin of patients who are delirious, comatose, or under chloroform at such a heat, and for so long a time, as to produce most destructive burns, and to prejudice the chances of recovery. In all such cases the bottle or brick should be well covered and used with special care. Again, I have known more than once of an infant, convulsed and insensible, being plunged by an excited nurse or mother into a bath at such a temperature as led to a fatal result. Water, which seems by no means dangerously hot to one whose hand is momentarily thrust into it and withdrawn, may occasion fatal shock to a convulsed infant, the entire surface of whose body is immersed in it for five or ten minutes. Once more, I have on several occasions seen severe scalds occur from the use of a "steam kettle" in cases of croup and diphtheria. A long funnel is made to project over the crib so as to throw the steam within a "croup tent," and on some movement of the apparatus, whether intentional or accidental, a quantity of very hot water (condensed steam) pours out of the funnel and scalds some part of the child's body. I mention these three forms of accident here, principally because they are all such as may be prevented by distinct warning being given by the medical attendant to those in charge of the patients.

In forming an opinion of the severity of any given case of burn or scald, there are at least four considerations which claim our attention—viz., the age of the patient and the degree, duration, extent, and situation of the injury.

Age.—In childhood, burns and scalds are especially fatal as well as common. If either extensive in area or severe in degree, they generally kill rapidly by shock, even when comparatively slight, accompanied by much suffering, restlessness, and prostration. If not quite of such frequency in old age as in infancy, they are then apt to produce equally disastrous results. For these reasons, no such accident is without significance when the sufferer is at either extreme of life; and the actual cautery, in my opinion, is seldom admissible as a means of counter-irritation in any disease, affecting very old or very young persons.

Degree of Severity.—This may vary from only a slight congestion of the skin to complete destruction of all the tissues of the part, and in extensive burns will vary, even in the same case, at different parts of the burnt surface. Upon the degree of the injury will, to a certain extent, depend our prognosis, both as regards the risk to life and the amount of permanent deformity in the event of recovery. Dupuytren recognised six degrees of burns, and the classification is one usually adopted as both in accordance with observation and convenient for purposes of description. The first degree is that in which there is produced merely a congestion of the surface of the skin, bright red, limited to the area over which the heat has acted, and with a sharply defined line marking it off from the pale uninjured skin around. In appearance, therefore, it resembles somewhat an erysipelatous blush. There is no destruction whatever of tissue. In the second degree vesication is present, the cuticle being destroyed and raised here and there by exudation beneath it. These blisters, of course, may be very large, pendulous bags, containing ounces of serum, or on the other hand extremely minute. Raw surfaces are left, if they burst or are opened, on the separation of the dead cuticle, and some amount of suppuration will take place. In certain instances the serum is absorbed, the vesicle collapses, and, on the removal of its dried up walls, healing is found to be complete. In all cases a red mark is left in the first instance, but this disappears in a short time and leaves no permanent scar. In the third degree the destruction extends to a portion of the cutis vera. The cuticle is detached and ruffled into folds, the brown burnt surface of the skin being exposed. The sore, which results after the separation of the superficial slough thus produced, must heal by granulation and cicatrisation. The scar, though possibly irregular, is not necessarily of an unsightly character. In the fourth degree there is sloughing of the whole thickness of the true skin. In such cases the subcutaneous areolar tissue is opened up; there is free and often long-continued suppuration, and ultimately a dense, fibrous, and highly contractile cicatrix, apt to lead to great deformity. In the fifth degree are included cases in which the destruction extends into the muscles, and in the sixth those in which there is roasting and charring of all the tissues of the part both hard and soft.

Duration and Extent.—The effects, both local and constitutional, of heat when applied to the surface of the body, are determined by the length of time during which the heat acts quite as much as by its degree. Thus molten metal at a white heat may be momentarily lifted and allowed to run through the fingers of a moist hand without any injury whatever; and the juggler, who licks a red-hot poker, performs no miracle. On the other hand, even so bearable a heat as that of the sun's rays, if long endured, will result in a burn of the second degree, and cases of sunburning are on record where life was threatened on account of the constitutional disturbance produced by the fact that a very large surface of skin was implicated. For it is to be remembered that the extent of a burn rather than its severity may be the serious feature in the case. This is best observed in children. Infants will often die just as quickly from a superficial burn or scald involving a large extent of the surface of the body as from a severe but more limited one.

Situation.—When a burn affects the trunk, and especially the abdomen, it will generally be found, other things being equal, much more dangerous than a like accident to one of the limbs. In this respect the head and neck probably occupy an intermediate position.

Local Effects and Symptoms.—All burns and scalds are very painful, and in certain instances the suffering is most intense and unbearable, especially during the daily dressing and exposure of the part, making the strongest men quiver and cry out pitifully. Nor is this always to be observed in those instances in which the injury is most severe or most threatening to life.

Swelling follows quickly the receipt of all these injuries, and is prone to be increased, of course, when active inflammatory changes supervene after the lapse of a day or two. Suppuration is free during the separation of the sloughs, and may be long-continued and copious from the large granulating surfaces which result. Fœtor is present until all sloughs have separated, except in so far as it is controlled by the use of antiseptics. Cicatrisation, when the surface to be covered is very large, is apt, after a time, to become slow and even stand still, for two reasons. First, the granulations have a special tendency to take on exuberant growth; and secondly, the very great size of the raw surface sooner or later wearies out, so to speak, the cicatrising process. This latter difficulty does not arise if small spots of skin be left undestroyed here and there over the burnt surface, for they serve as so many centres for the development of cicatrix. This state of affairs we imitate with much success by placing skin grafts at various spots over the surface of a sore (see section on Ulcers). All scars resulting from burns are more or less unsightly. They are usually much whiter on the whole than normal skin, but with a superficial network of capillary vessels giving a pinker hue to certain spots. They may be raised, irregular, puckered, or wrinkled. They sometimes become extremely thick and dense, like keloid, for which they are apt to be mistaken. They are, of course, where the skin has been destroyed, destitute of hair follicles, sebaceous and sweat glands, and all the other characteristics of healthy skin. After many years they sometimes become the seat of epithelial cancer. But the chief interest, as well as anxiety, which attaches to these scars is their tendency to contraction and hardening, which, indeed, usually commence as soon as healing is complete, and ultimately there come to be added to the irregular and unsightly mark, distortions of the features of the most frightful character (such as eversion and drawing down of the lower lip, with exposure of the teeth and gums, and constant dribbling of saliva; exaggerated ectropion, &c., &c.), or serious interference with the functions of the limbs through flexion and fixing of joints by cicatrical webs.

When the skin has been destroyed over the whole circumference of a limb at some part, the contraction which occurs during healing leads to much inconvenience. Thus I have seen a granulating wound in the lower part of the thigh, three or four inches in breadth, and extending round the limb, lead to such constriction of the circulation as to cause enormous swelling and œdema of the foot and leg. Such sores often remain unhealed, especially if they exist over a joint, and, while they include the whole circumference of the limb in their embrace, are tightly stretched over and adherent to such bony prominences as the calcaneum, olecranon, &c.

Constitutional Effects and Complications.—Shock, more or less severe, will occur in each case, and may prove fatal even in burns of only the first degree, provided that most of the surface of the body be injured. In all severe cases the prostration and collapse are extreme and often rapidly fatal. Delirium and rigors in the adult, but more frequently convulsive movements in the child, are common at this stage, as well as most distressing restlessness and constant thirst. If life be maintained and reaction follow, congestion and inflammation of internal organs are apt to supervene, sometimes at an early, sometimes at a comparatively late period of the case. Thus, congestion of the brain and its membranes with effusion (a specially frequent mode of death in childhood), congestion of the kidneys with albuminuria, and of the intestinal tract, lungs, pleuræ, &c., are all frequently met with. Fever is usual; and in serious and fatal cases is apt to be presistent and high. One very special and interesting complication is that of duodenal ulceration, to which the attention of the profession was first distinctly drawn by Curling, about forty years ago. This occurs usually in young persons, but has been met with in those more advanced in life. It often proves fatal, but is also frequently recovered from. It has caused death during the first week, while in other cases six or eight weeks have elapsed before its symptoms have declared themselves. It is not confined to cases of very severe or extensive burning, but occurs sometimes in comparatively slight ones. The diagnosis of such a condition may be safely made when a patient begins to suffer from gastric and intestinal irritation, accompanied, it may be, by vomiting and diarrhœa, and followed by such symptoms as the following—viz., tenderness of the belly, pain in the epigastrium, hæmatemesis, and bloody stools. If perforation occurs sudden collapse with tympanitic swelling of the belly will ensue. It must, however, be borne in mind that, in many cases where *post-mortem* examination has revealed the existence of duodenal ulceration, no symptoms whatever have occurred during life unmistakably pointing to such a condition.

Septicæmia, pyæmia, erysipelas, tetanus, and secondary hæmorrhage are all causes of occasional disaster in burns, as in other surgical injuries. When suppuration is copious and prolonged, patients frequently die exhausted, after weeks of maintained fever and progressive emaciation. Occasionally the foundation of amyloid visceral disease is laid during the months of convalescence.

Treatment.—The first object in every case is to soothe pain, and, as far as possible, mitigate shock. With this view, if the case be severe, the patient should be put to bed with as little delay as possible, and reaction favoured by the use of warm coverings, hot bottles, and, if deemed advisable, the administration of some alcoholic stimulant. The injured parts must be tenderly handled, and, if much of the surface of the body be involved, the dressing of it should be done in successive portions, so as to avoid unnecessary loss of heat. Vesicles ought not to be ruptured, still less to be peeled off, as the detached epidermis forms the most kindly covering for the exquisitely sensitive raw surface beneath. If very large and tense, however, relief sometimes follows the evacuation of their contents by puncture. If small, there is no special call for interference. A full opiate should be administered without delay, if possible by hypodermic injection, since in that way it will probably act most quickly. I have lately, having heard of the good effects of the application of hydrochlorate of cocaine, applied it in two cases of recent burns. Their surfaces were freely painted over with a 5 per cent. solution of the drug with great apparent relief to the pain.

Perhaps there are no surgical ailments for which so great a variety of local treatment has been recommended. All are agreed, however, that it is a matter of great importance, as regards the recovery of the patient, that the dressings should be changed as seldom as possible, consistently with comfort and cleanliness. It is, therefore, of some consequence that any dressing used should be such as to control to some extent putrefactive changes in the sloughs and exudations. Some favourite modes of dressing aim at exclusion of the air. Thus *flour* is sometimes laid on thickly and equally with a dredger over the whole surface, where it is allowed to adhere and to form a crust with the exudations. This is not removed until it becomes loosened by the discharge. Either as an addition to such treatment or by itself, *cotton-wool* has been much used, as recommended by the late Dr. A. D. Anderson of Glasgow, the part being enveloped in a substantial mass of it, which is retained in position by a moderately firm bandage. *Starch*, *molasses or treacle*, *gum*, *furniture-varnish*, *white paint*, *lard*, *a mixture of collodion and castor oil*, and *solution of india-rubber* have all been used with much the same end in view—viz., excluding, more or less completely, the atmosphere. *Carron oil* (equal parts of linseed oil and lime water) has long enjoyed a great reputation as a primary dressing. Unguents and oils, containing various sedative or antiseptic drugs, are also in common use for the same purpose, *e.g.*, *carbolised oil* (one part of phenol to twenty of olive oil); *benzoated oxide of zinc ointment and phenol* (thirty parts of the former to one of the latter); *iodoform*, mixed with petroleum cerate, vaseline, or lard; *eucalyptus ointment* [paraffin wax (135° to 140°), 2 oz.; vaseline, 2 oz.; oil of eucalyptus, 1 oz.]; *boracic acid ointment* (paraffin, 5 parts; vaseline, 10 parts; boracic acid in fine powder, 3 parts). It is often a convenient mode of treatment to dress the injured surfaces, after thoroughly washing and disinfecting them with a 2 per cent. solution of phenol, with pieces of linen rag uniformly smeared with one or other of such antiseptic ointments, as those just enumerated, and afterwards to envelope the part in a thick layer of *salicylated wool* (absorbent cotton-wool, impregnated with 4 per cent. of salicylic acid and the same quantity of glycerine, to make the acid adhere to the wool). *Oil of turpentine* has been much used as a remedy for burns mixed with *resin ointment*, at first recommended by Dr. Kentish. It is sometimes also employed as an addition to the ordinary carron oil. *Bicarbonate of soda*, in powder, is said almost immediately to relieve pain and to be a very suitable local application. It should be powdered freely over the part, and this should then be covered with a piece of wet lint. *Charcoal* has also been recommended, and, if poulticing be at any time thought desirable, it is certainly well to mix a quantity of powdered charcoal with the linseed meal or other main constituent of the poultice. *Cold applications* have long been held in repute as being grateful to the patient and a ready means of lessening the pain. They ought not to be freely employed when the burn is extensive, lest the chilling of the surface be encouraged. They may take the form of iced cloths frequently wetted, or, what is perhaps more efficient, the limb may be placed under an irrigating apparatus, the water in which contains some antiseptic, such as phenol, boracic acid, Condy's fluid, &c. *The continuous tepid bath* (see p. 299), at a temperature of from 90° to 100°, as recommended by Hebra, is, perhaps, not so much resorted to as it deserves, on account of the difficulty of carrying it out efficiently. In such a bath a patient may remain suspended on a sheet, as in a hammock, for weeks together. Pain is said to be greatly relieved immediately on immersion. Antiseptic substances may be added to the water of the bath, if thought desirable. *Amputation* must be practised, at as early a stage as possible, in cases where the charring of the tissues is so severe as to render recovery otherwise hopeless. One sees such cases occasionally in epileptics who are "cast into the fire," in persons whose limbs are accidentally fixed and subjected to intense heat, &c. Considerable judgment is required both in choosing the time and in determining the site of such amputations. It is sometimes necessary to remove a limb at a later date, on account of such mishaps as secondary hæmorrhage, or the opening of a joint on the separation of the sloughs. Lastly, as has already been said, amputation may be rendered necessary in some cases, even after the lapse of years, when it is impossible to obtain complete healing owing to very extensive destruction of the skin.

It need hardly be remarked that the treatment of the healthy granulating sore, which results on the separation of all the sloughs, is to be conducted on ordinary principles. Extension by means of splints or other suitable apparatus, with the free employment of skin-grafting, may often, however, be necessary when much skin has been lost, to prevent or limit contraction and consequent deformity. The special tendency which exists to exuberance of growth in the granulations must be dealt with by means of astringents, such as sulphate of copper, red wash, lotions of lead, &c.

XXIV. FROST-BITE.

(*b.*) Dermatitis Congelationis.

The first effect of cold upon the skin is to cause a contraction of its blood-vessels, and, consequently, to impair its circulation and weaken its vitality. This is chiefly observable in the extremities of the body, where the blood-stream is naturally most feeble, and in persons of an habitually languid circulation. If not too long-continued, it is followed by a state of reaction or unusual activity of the circulation. We may even freeze to complete insensibility a portion of skin (a veritable Frost-bite) and it will recover itself thoroughly in a short time—a fact which is daily taken advantage of by surgeons in the production of local anæsthesia. After a period of whiteness, hardness, and insensibility of the skin, the circulation becomes gradually re-established, passing at length into such a state of activity that the part becomes crimson, throbbing, hot, and painfully aching. Soon it returns to its normal condition. But, short of being actually frozen, the skin exhibits the same kind of reaction—to a greater or less degree in different persons—whenever it has been exposed to a low temperature. The frequent repetition of this alternation—especially in the fingers, toes, and ears of certain children and women—may end in the local inflammations, which are known as chilblains, and are characterised by swelling, heat, itching, and sometimes by vesication and sloughing (see Erythema pernio, p. 108).

But intense cold, when long-continued, will not merely weaken and induce inflammatory changes in the part, but will destroy it; and natural cold may produce such a result in one long exposed to its influence, even without his being aware of the fact. The part first becomes of a slightly blue or livid tint, but ultimately blanches, becomes shrivelled and insensible, and gives a sensation of hardness and stiffness. Recovery still may take place, or gangrene may supervene in one of two ways. If the above condition be sufficiently long maintained, an immediate and complete loss of vitality may ensue; or, short of this, reaction may take place, and be followed by an inflammation leading to subsequent gangrene. In both cases the result is the same—viz., the death of the part. The mortified skin and other tissues may remain dry and hard, or may present the appearance of a moist gangrene. This latter will generally be their condition when inflammation has preceded their death.

As in the case of chilblain, the parts most apt to be affected are the extremities, and especially the toes, fingers, ears, nose, and chin; but large portions of the body may, of course, be frost-bitten in cases of prolonged exposure. Any fault of circulation must, of necessity, predispose to the occurrence of frost-bite. I remember some years ago treating a man who suffered from mortification of the tips of two or three toes, which had supervened as a consequence of his working out of doors on a very frosty day, under circumstances in which his feet were constantly cold and numb. I had occasion, a year before that occurrence, to tie his brachial artery on account of an aneurism situated a little above the elbow; and there was every reason to believe that his vessels were extensively atheromatous. Hence, a degree of cold, which would certainly not have produced a permanent injury in the toes of most persons, was sufficient to cause gangrene in his. For a like reason, frost-bite occurs frequently in the very old and the very poor and ill-fed.

It will thus be seen that cold may be at times only the exciting cause of gangrene, and in the numerous cases of frost-bite of the feet, which were met with in such campaigns as that of the Crimea, it seems to have been a general impression that scurvy, insufficient and improper diet, exhaustion from overwork, &c., were, at least, strong predisposing causes.

Treatment.—Our object in treating frost-bite should be to restore the vitality, but, at the same time, to moderate and control the reaction in the frozen parts. If this be excessive, and even a slight inflammation ensue, it will probably be sufficient to seal the fate of tissues already greatly weakened. Experience has taught the inhabitants of all cold countries that the best and safest mode of treatment is to avoid the direct application of warmth, and rather to restore the temperature very gradually by friction with oil, or even with snow or cloths dipped in cold water. It has been recommended, in the case of the limbs, to elevate them vertically, so as to facilitate the venous return of blood. After reaction, the part may be enveloped in flannel or cotton-wool; but the proximity of fire or stove should be carefully avoided. These measures are, moreover, better carried out in a somewhat cold than in a very warm apartment. Should gangrene ensue, it seems best to allow nature to effect the separation of the parts. The tissues, contiguous with those actually dead, have had their vitality greatly lowered, and are prone, on being injured, to inflame and slough. They should, therefore, not be interfered with.

XXV. PSORIASIS AND LEPRA.

Syn.—*Psora* (of the Greeks)—*Dartre sèche*—*Dartre lichénoïde*—*Herpes furfurans* (Alibert)—*Schuppenflechte*—*Aussatz*—*Dry tetter*—*Alphos* (Wilson).

The disease, of which the above are the principal synonyms, is, next to eczema and scabies, by far the most frequent of the affections of the skin, and therefore merits most attentive consideration. There is a non-syphilitic and a syphilitic form. The latter, which, in most cases, is rather a second stage of some of the other syphilitic affections of the skin than a distinct eruption, and so-called from its resemblance to non-syphilitic psoriasis, is not included in the present description, being referred to along with the other syphilides.

Lepra, on the other hand, which has long been, and by some authors still is, separated from psoriasis, has no right to be considered in the light of a separate affection, as it is in reality merely one of the varieties, or rather one of the stages, of that complaint.

Psoriasis may be defined to be a chronic eruption, characterised by the appearance of dusky-red, or even coppery, slightly elevated patches of various shapes and sizes, covered with silvery-white, imbricated, and very adherent scales, the elbows, knees, and head being the parts most certainly attacked, there being a very variable amount of itching, but no exudation on the surface of the skin, and no general reaction.

The investigations of Robinson,[*] Allan Jamieson,[†] and others prove that this eruption is due to hyperplasia of the cells of the rete Malphigii—particularly between the papillæ—and of the external root-sheath of the hair-sacs. The upper layer of the epidermis is but slightly changed, but the blood-vessels of the papillæ and superficial parts of the corium are dilated, and emigration of white blood-corpuscles and serous infiltration follow, increasing with the duration of the eruption. The silvery character of the scales is said to be due to their containing minute particles of air.

Symptoms.—At the outset of the disease little silvery-white, scattered spots, about the size of pin-heads, make their appearance. To this stage the name of *psoriasis punctata* has been given. These spots

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[*] *A Manual of Dermatology*, by A. R. Robinson, M.B. D. Appleton & Co., New York, 1885. p. 388.

[†] *The Histology of Psoriasis*, by W. Allan Jamieson, M.D. Oliver & Boyd, Edinburgh.

gradually increase in size till they become as large as, and have the appearance of, drops of mortar, when the eruption is named *psoriasis guttata.* As the disease progresses, the spots—by peripheral extension—form rounded patches of variable size, though rarely more than two or three inches in diameter. This is the *psoriasis nummularis* of authors. Not unfrequently some of these run together, forming patches of large size and irregular outline. When the eruption is very extensive and very obstinate, it is called *psoriasis inveterata.* A form of eruption is described under the name of *psoriasis universalis,* where the eruption covers the whole of the body from head to foot, without leaving any intervals of sound skin (see article on pityriasis rubra, p. 301). In many cases it does not advance further than psoriasis nummularis, and the rounded patches may remain unchanged for some time; but, when the disease is progressing towards a cure, either in the natural course of events, or under the influence of remedies, a healing or rather disappearance of the eruption takes place in the centre of each, so that circles of eruption are left inclosing healthy, or nearly healthy skin. This is the so-called *lepra* or, as it may more appropriately be named, *psoriasis circinata.* It will thus be seen that lepra is merely one of the declining stages of psoriasis, and has no claim to be looked upon as a separate complaint. As the eruption disappears from the centre of a patch, it generally extends at the edge, so that the circle gradually increases in size; but, as the healing in the centre usually progresses more rapidly than the peripheral extension, the circle gradually becomes thinner and thinner, till at last it disappears entirely. When a number of these circles or segments of circles are contiguous, they may unite (though they never overlap) so as to form a figure of 8 or various kinds of wavy lines, giving rise to a very peculiar appearance. This is the so-called *psoriasis gyrata* or *figurata.*

From the above description it will be observed that all the forms of eruption alluded to are to be regarded in the light, not of varieties, but of stages of the complaint; psoriasis punctata, guttata, nummularis, inveterata, and universalis, being advancing, and psoriasis circinata and gyrata declining stages.

At the same time it must be remarked that the eruption does not always pass through all these stages. Thus it may never advance further than the punctated, guttated, or nummular forms, and, as was stated before, it very rarely goes the length of the universal form.

Psoriasis rupioides.—There is a peculiar appearance which psoriasis sometimes assumes, which I first observed a good many years ago, and which had not previously been described. When it occurs, it may be regarded as a stage intervening between the so-called psoriasis guttata and nummularis. In it the accumulation of epidermis takes place to an unusual extent, so that on many of the patches it assumes the shape of large conical crusts marked by concentric rings. In fact, the crusts exactly resemble in shape limpet shells, and, from their likeness to crusts of rupia, I have called this variety psoriasis rupioides. Except in the shape of the crusts, however, there is no connection whatever with rupia, and, on removing a crust, there is no ulceration beneath but a slightly elevated, dusky-red, rounded surface is exposed to view, which sometimes bleeds a little. Since my attention has been directed to the subject, I have observed many such cases, of one of which a water-colour picture was made, from which the plate at the commencement of the volume is taken.

When patches of psoriasis first make their appearance, the skin affected is hardly at all raised above the natural level, and it possesses a rosy-red colour; but when they have existed for some time, the elevation is often much more marked, and the colour changes to a dusky-red or even a deeper tint: so that at first the elevation of the eruption is mainly due to the epidermic accumulation, but, in the later stages, to the elevation of the inflamed surface as well as to the epidermic accumulation. As the disease progresses towards a cure the elevation becomes less and less marked, the excessive formation of epidermis ceases, and the colour of the patches by degrees becomes lighter, and finally disappears. When the scales have fallen off, and the dusky-red patches alone are left, the disease resembles chronic eczema siccum in many respects, a point which will be again referred to. After the eruption has subsided, it not unfrequently happens that dark stains are left in the site of the previous patches, being due to an abnormal deposit of pigment consequent upon the long continued congestion of the parts, and most characteristically developed when a course of arsenic has been taken, which produces a more intense determination of blood to the affected parts. There is, curiously enough, a difference of opinion amongst authors, as to whether psoriasis is accompanied or not by irritation of the skin—which is all the less excusable, seeing that we have not here to do with a question of theory, but of fact. Thus, Hardy[*] states that itching is always present, while Devergie[†] informs us that, in uncomplicated cases, there is never any itching at all. Hebra,[‡] on the other hand, states that the itching is only present when the disease is commencing, or when new points of eruption are making their appearance, and that it never continues uninterruptedly during the whole course of the disease. There can be no doubt that the statement of the last-named observer is substantially correct. As a rule, the itching, when present, is moderate, and far less severe than in cases of eczema and scabies, in which diseases it is one of the most prominent symptoms. I have, however, met with a few very extensive and rapidly progressing cases in which the itching was very great, and in one or two instances where I prescribed arsenic, this medicine acted so powerfully upon the skin that the itching became almost intolerable, and as severe as in the worst cases of eczema. When the itchy sensation is severe, the silvery scales, which are naturally very adherent, are torn off by the scratching, and blood exudes, which dries up into little blackish crusts, and alters very materially the appearance of the eruption; but it is, of course, only in exceptional cases that this is observed. Pain is only complained of when scratching is much indulged in and the skin abraided by the nails of the patient, or when fissures occur. These are not unfrequent, owing to the natural elasticity of the skin being impaired where the eruption exists, and are principally observed at the joints, where the skin is constantly in motion, and its elasticity proportionally tried.

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[*] *Leçons sur les Maladies de la Peau*, par le Docteur Hardy. Deuxième édition, Première partie, 1860. p. 103.

[†] *Traité Pratique des Maladies de la Peau*, par Alph. Devergie. Deuxième édition, 1857. p. 465.

[‡] *Handbuch der Speciellen Pathologie und Therapie. Dritter Band.* Zweite Lieferung. Erlangen, 1862. p. 277.

Psoriasis is throughout a *dry* eruption, except in the rarest instances, in broken-down subjects—thus differing from many other skin diseases, and from eczema in particular, for which it is frequently mistaken—if the exudation of small quantities of blood be excepted, which takes place when the fissures are deep, or, as stated above, when scratching is much indulged in.

It is never accompanied by febrile disturbance, if we except those few cases in which the eruption comes out with great rapidity—as after a chill—or in which the irritation is excessive, and even then it is generally slight, and often wanting altogether. It is indeed wonderful with what perfection all the internal organs appear to perform their functions in most cases of extensive psoriasis.

The eruption may occur on any part of the body, but in the majority of instances it commences on the elbows or knees, and not unfrequently is limited to these parts. On this subject Sir E. Wilson * thus expressed himself:—"If there be any doubt as to the diagnosis of an eruption, look to the elbows and the knees; if it do not exist there, and has not visited those regions, it is not lepra" (Psoriasis). This statement, hewever, is liable to numerous exceptions. Thus I recollect, at the present moment, the case of a patient in whom the eruption was limited to the region of the right scapula, that of a boy who had two small patches on his back, and that of a young gentleman, aged twenty-one, who had two patches of psoriasis, each rather less than the palm of the hand, on the abdomen. In the last case these had existed for ten years unchanged, and the eruption was not, and never had been, on any other part. They were all undoubted cases of non-syphilitic psoriasis. Next in frequency to the elbows and knees, the head is the part most commonly, and in some cases most severely, and it may be exclusively, attacked; in which case, if it has existed long, and is at all severe, it is not unfrequently accompanied by more or less thinning of the hair; but, as the eruption disappears, the hair grows again with its pristine vigour, the hair follicles not being destroyed as in some other affections—favus, for instance. Sometimes the eruption on the head is scattered here and there, sometimes the whole scalp is implicated, and then the eruption usually extends a little way, but not far, on the brow. In either case, the scales which fall off accumulate amongst the hair, and may give rise to even greater annoyance than in cases of pityriasis. When the eruption is extensive, it will frequently be found in great abundance on the buttocks. It is sometimes met with on the dorsal surfaces of the hands and feet, and occasionally the palms and soles are exclusively involved. Fortunately, the face is not very frequently the seat of the eruption: when it does occur there, it is usually in the form of small and slightly elevated spots, and, as will presently be pointed out, it is more rapidly cured by local applications than when it appears on the trunk.

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* *On Diseases of the Skin*, by Erasmus Wilson, F.R.S. 4th edition. Churchill, 1857. p. 298.

The nails of the fingers and toes (psoriasis unguium) are sometimes invaded. They may be affected without there being any eruption, but more usually the disease coincides with psoriasis of the skin. Sometimes only one of the nails is attacked, usually several—especially those of the thumb, index, and middle fingers—rarely all. The nail loses its natural smoothness and polish, becomes opague, yellowish, and much thickened. It likewise becomes very brittle, in consequence of which longitudinal fissures form, which have a blackish appearance, owing to the deposit in them of particles of dust floating about in the air. The free end of the nail is likewise thickened and brittle, and becomes broken and fissured when used in buttoning the dress, &c. Sometimes there is inflammation of the nail-bed, which commences at the edge of the nail, which is not thickened, but becomes dry, opaque, and loose, so that a spatula can be pushed for some way between it and the nail-bed. In other cases the surface of the nail is marked by numerous little indentations, giving it a worm-eaten appearance. Occasionally the nail falls off, but it is generally replaced by another which may be similarly diseased or perfectly healthy.

If psoriasis attacks the ear, it generally implicates the whole of the auricle (Hebra), and not unfrequently, by extension of the disease into the meatus, and accumulation of exfoliated epidermis in the canal, deafness is produced exactly in the same way as in cases of eczema of the meatus. But in psoriasis the deafness is only temporary, whereas, in eczema, when the eruption has lasted a long time, there is often more or less permanent impairment of hearing (see p. 202).

Psoriasis is limited to the skin and its appendages, and never attacks either the mucous membrane or the internal organs.

Ætiology.—There is no question connected with psoriasis more interesting, nor, in some respects, more obscure than its causation. Of some of the exciting causes there can be no doubt, and that there is a peculiar taint which creates the predisposition is, in my opinion, quite certain. In this respect our knowledge is as vague as that with regard to cancer. Sir Erasmus Wilson was of opinion that it is "a manifestation of the syphilitic poison, after transmission through at least one, and probably through several generations." In support of this view he had seen several cases, of which the following is a specimen:—"A man had infantile syphilis when a child; he married, and had eight children, two of whom died as infants; of the six surviving children, three are the subjects of lepra vulgaris." * It is very difficult to say whether such cases—which I have also observed—are mere coincidences, or whether the syphilis in the parent and the psoriasis in the children stand in the relation of cause and effect. That the disease is hereditary, however, any one who has had any experience of it can verify, so that it is unnecessary to mention cases in support of such a very patent fact. It must not, however, be supposed that because a father or mother is affected with psoriasis, their children must be so too; for it is here as with syphilis, in which a father or mother tainted with syphilis may beget perfectly healthy children. And when psoriasis is transmitted from a parent or parents, it is very unusual for all the children to be affected. But I recently attended a family, composed of father, mother, two daughters, and one son, all of whom except the mother were affected. Again, sometimes the taint is transmitted from grandparent to grandchild, the intervening generation being spared.

A boy, thirteen years of age, was brought to me on December 23, 1878, on account of a typical attack of three months' duration, and implicating the elbows, knees, and head. None of his brothers or sisters, six in number, were affected, but his mother, who accompanied him, had the same disease upon her knees, which always became aggravated when she was nursing. She was not aware of the existence of any skin affection in her father, mother, brothers, or sisters, but she had a distinct recollection that her paternal grandmother had a scaly skin disease of the head exactly corresponding in character with that upon her own knees.

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* *On Diseases of the Skin.* 4th edition, pp. 306 and 432. Churchill, 1857.

Hardy* and others bring psoriasis, eczema, lichen, and pityriasis under one group, naming them the "Dartres," the peculiar taint in virtue of which they are called out being named the "Dartrous diathesis." That eczema, lichen, and one form of pityriasis are very closely allied I have already endeavoured to point out; but that psoriasis is quite distinct from them, and indeed from any other affection of the skin, I am quite convinced; and what the dartrous diathesis really is I am totally at a loss to know.

There can be no doubt that psoriasis usually occurs in persons of an otherwise sound constitution, and that those affected with it are very rarely scrofulous is equally certain. Thus Hebra states in the work above referred to (p. 281), that, while he has had more than 1,000 cases of psoriasis under his care, the disease only occurred once in a rachitic patient. This patient frequently had attacks of hæmoptysis; he succeeded in curing the disease very rapidly, and by very simple means, and it is the only case he ever met with in which no relapse occurred, although the patient was known to him for fifteen years afterwards. I have met with a very similar case in my practice. The patient, a male, aged about fifty, was treated by me at the Hospital for Skin Diseases some years ago. He had a severe deformity of the back, in the dorsal region; and, being out of employment, his diet was very poor. The eruption was very extensive, and had existed for twenty-eight years without ever being entirely away during that period; but in the space of six weeks, under the influence of cod-liver oil alone, it had all but entirely disappeared, and I then lost sight of him. We see then, that, while persons affected with psoriasis are rarely strumous, dermatologists who assert that they are never so are not absolutely correct.

It is asserted by some physicians that there is some connection between psoriasis and the rheumatic aud gouty diatheses, but it is very doubtful whether it occurs more frequently in such persons than in those who have no such tendency.

But, while the constitution of the patients is generally sound, a careful study of the cases under my care has led me to the conclusion that they are occasionally debilitated. At the same time it must be observed that *mere debility is quite incapable of itself of calling forth the disease, unless the predisposition to it exists.*

I have been particularly struck by the influence of debility in the causation of psoriasis, in the case of some nursing women who have consulted me; and I have no doubt that cases such as those I am about to quote have frequently come under the notice of medical men, though they have not, so far as I know, been recorded.

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* *Leçons sur les Maladies de la Peau.* Deuxième édition, p. 18. 1860.

On the 1st of February, 1864, a poor woman came to the Hospital to get advice with regard to an attack of psoriasis. She was then nursing her fourth child, which was eight months old, and the eruption made its appearance when the child was two months of age. The disease came out for the first time after she had nursed her first child for about three months, and disappeared about six weeks after it was weaned, and the same thing happened with her second and third children.

The second case, which was reported by my former assistant, Dr. Peter Robertson, now of Milngavie, is still more curious than the first:—"Mrs H., aged twenty-four, came to the Hospital on the 4th of April, 1864. She had been affected with psoriasis on three separate occasions, while nursing three male children. She had been married for seven years, and had had five children, three sons and two daughters. Her first child was a daughter, whom she suckled for fifteen months without any appearance of the disease. Her second child was a son: the eruption came out after she had nursed him for six months, but disappeared a few weeks after he was weaned. Her third child was a daughter, who was suckled for thirteen months without any appearance of the complaint. Her fourth child was a son, and after she had nursed him for six months the eruption came out, and disappeared a few weeks after he was weaned. Her last child was a son, who was eight months old when the patient came to the Hospital. She was nursing him also herself, and the disease reappeared upon her skin, and in a more aggravated form than ever (the so-called psoriasis inveterata), when he was about five months of age."

What view then can we possibly take of cases such as these (and I have met with multitudes of them), other than that the disease was brought out by debility induced by lactation, occurring probably in those whose diet was of an inferior description. It may be asked how, in the second case, the eruption only came out while the patient was suckling boys? To which I answer that in all probability the debility induced by suckling the boys was greater than when the girls were nursed.

On 29th January, 1869, a young woman came to me suffering from a typical attack of psoriasis, the disease not having been known before in any member of her connection. She told me she was certain that she had contracted the disease owing to her having been nursed by a lady, all of whose children had it, and who suckled her, owing to her own child being too weakly to take the breast. It would be interesting to know if similar cases have come under the observation of those who have had experience of this complaint.

Long-continued mental fatigue, as from over-study, great anxiety, &c., is likewise very apt to call out the disease. For instance, I recently attended a young gentleman, aged twenty-three whose cousin was previously treated by me for the same complaint, who had shortly before become cashier of a very extensive business, and who passed immense sums of money through his hands every week, a very responsible post for such a young man. He was affected with an aggravated outbreak of psoriasis, which had, to a great extent, baffled all kinds of treatment; and I have no doubt that no material improvement can take place till he leaves his business for a time, and seeks in change of air and scene that repose which is necessary to the removal of the nervous depression which at present exists.*

Indeed, I have noticed that whenever the general health is below par, no matter from what cause, although it may apparently be to a trifling extent, the eruption is very apt to be called out in those who are predisposed. But it must be distinctly understood that in no case, in my opinion, is debility capable of *producing* the disease, but merely of *calling it forth* in those who are predisposed thereto. And, to avoid misconception, it may be as well to state that signs of debility are not met with in most cases, and that the disease often occurs in those who are in every other respect in the most robust health, and who are muscular and well nourished.

It is by no means the exclusive appanage of the poor, being met with in all ranks of life with nearly equal frequency; and it may occur at almost any age, but generally not before the sixth year of life. I have never seen a case in an infant; but, while the eruption may make its first appearance at an advanced period of life, it usually comes out before the age of twenty-five, and often as early as the sixth or seventh year.

What is the frequency of psoriasis, as compared with other skin affections? Authors are pretty well agreed that, next to eczema and its varieties and scabies, it is the most frequent of all the affections of the skin; but the statistics of dermatologists vary considerably, when we come to the exact proportion which it bears to others. Thus in Professor Hebra's work (p. 281), we find it stated that it occurred 50 times amongst over 3,000 cases of skin disease. Devergie, on the other hand, met with 280 cases amongst 1,800 patients affected with cutaneous complaints;* Sir Erasmus Wilson,† 73 in 1,000; while I find that, of 38,054 hospital cases, there were 3,206, and of 2,000 private cases, 224 cases of psoriasis. In these statistics there is considerable discrepancy, for which there are many causes. Thus they are taken at different parts of Europe—at Vienna, Paris, London, and Glasgow, respectively; and then, again, Sir Erasmus Wilson's statistics are entirely derived from private practice, whereas most of mine were from hospital practice. So that we shall probably arrive more nearly at the truth by combining them, from which we find that of 45,854 cases of skin disease, there were 3,833 of psoriasis, or nearly 1 in every 12 cases.

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* Since the above was written, the eruption has almost completely vanished, during a residence of two months at the coast, without any other treatment, which is all the more surprising as sea-air is generally prejudicial.

Then as to the sex of the patients, Hebra calculated that, on an average, of every 50 cases of psoriasis 33 occurred in males, 17 in females; Sir Erasmus Wilson, on the other hand, amongst 73 cases, met with 40 in females, and 23 in males. My statistics show, of 314 cases in which the sex was noted, 161 in males, and 153 in females, or nearly an equal proportion; and if we combine these statistics, we find the disease 217 times in males, and 210 times in females.

The seasons have a decided influence upon the disease in most cases. Thus, when it is of recent date, it will frequently be found to be worst in winter, and least apparent or almost entirely absent in summer; and, in old cases where it is always more or less present, it is generally mildest in summer, and most aggravated in winter or spring. Exceptions to this rule are, however, frequently observed.

There can be no question that sea-air and sea-water are generally prejudicial to such patients, and are apt to call out an attack, or to aggravate an existing one, though not always; indeed, it may happen that an outbreak disappears during a residence by the sea, an illustration of which has already been given.

Mere local irritation never produces psoriasis, although some dermatologists assert that it often does. But an irritant applied to the skin may call out the eruption at the part irritated, in those who are already affected, or who are liable to it. It thus differs from simple eruptions, such as eczema, in which mere irritation of the skin may produce the disease in any person.

Diagnosis.—When a typical case of psoriasis comes under observation, it is impossible for any one, who has any experience of it whatever, to confound it with other eruptions. The prominent characters may, however, be recapitulated. The patches are dusky-red or coppery in colour; they are covered with silvery-white, imbricated, very adherent scales; they exhibit no moisture whatever, and wherever else they may be situated, the elbows or knees are usually affected.

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* *Traité Pratique des Maladies de la Peau*, par Alph. Devergie. Deuxième édition, p. 464. Paris, 1857.

† *An Inquiry into the Relative Frequency, the Duration, and Cause of Diseases of the Skin, &c.*, by Erasmus Wilson, F.R.S. Churchill, London, 1864. p. 37.

The disease which it is most likely to be mistaken for it, is the so-called *Psoriasis syphilitica*—that is, any scaly syphilitic eruption. I have unfortunately met with many cases of psoriasis in which the patient had been salivated by the previous attendant, under the idea that it was syphilitic, an error which is excusable—seeing that the two forms of eruption, the simple and the specific, resemble one another in many respects—but none the less to be deplored. It is, therefore, of great importance to master the main points of difference.

The points to be attended to in arriving at a correct diagnosis are:—

1. *The origin of the Disease.*—In the specific forms of the affection, the system is contaminated by the inoculation of a poison which is usually communicated to the affected person by his contracting a hard chancre from another who is similarly affected. We must, therefore, interrogate the patient, when he can generally, if he likes, recollect having had a chancre, probably not very long before, say from six weeks to two years before the appearance of the eruption. But it must also be remembered that the secretions from secondary syphilitic eruptions are capable of communicating syphilis to a healthy individual, so that, in the absence of all history of a chancre, we must remember the possibility of transmission of the poison from secondary sores, and we must also bear in mind the probability that the patient, either from motives of false modesty, or for other reasons, is concealing the truth, or that the primary sore escaped his notice.

Non-syphilitic psoriasis is not contagious, but is often handed down from one generation to another.

2. *The age of the patient.*—In the majority of cases of non-specific psoriasis, the eruption first makes its appearance before the age of twenty (although in many it appears after that time), and instances are frequently met with in which it first manifests itself at six or seven years. Almost all cases of the specific eruption, on the other hand, necessarily occur after the age of puberty, and not usually before twenty, because children are not likely to be exposed to the contagion of syphilis (I leave out of consideration entirely cases of hereditary syphilis in which psoriasis does not form one of the manifestations); so that we can at least go the length of inferring that cases which have commenced before puberty, are pretty surely non-syphilitic.

3. *The duration of the eruption.*—Syphilitic psoriasis may last many months, or even one or two years, when no treatment whatever has

been adopted, but the majority of cases are more recent when first seen; while non-syphilitic psoriasis may have existed five, ten, fifteen, twenty years, or even, on and off, for a whole lifetime. Thus, the latest case of syphilitic psoriasis which occurred at the Hospital for Skin Diseases (in which I noted the duration of the eruption), had existed for several months when I first saw it, while the last case of non-syphilitic psoriasis had lasted seven years, and the one before this for thirty.

4. *The extent of the eruption.*—Syphilitic psoriasis is *not usually* very extensive, although the eruption may be much disseminated. Non-syphilitic psoriasis *may* be very limited, and in first attacks often is so; but it may, and often does, cover the greater portion of the cutaneous envelope.

5. *The way in which the eruption appears.*—In the syphilitic form the eruption usually follows upon, and constitutes a second stage of, some other form of syphilitic eruption (*e.g.*, a papular or tubercular syphilide). while the other assumes the characters of psoriasis from the very first.

6. *The size and shape of the patches.*—The patches of the specific disease are *usually* small, and generally either in the shape of little isolated spots about the size of split-peas, or of circles or segments of circles of comparatively small size. The patches of the non-specific variety *may* be very small, and often assume the guttate and circinate forms; but usually, when the disease is at all severe, many of them are very large and irregular in shape—although, mingled with, and at the edges of these, small spots and circles or segments of circles are often observed. These circles are often of large size, being sometimes several inches in diameter.

7. *The seat of the patches.*—The non-syphilitic disease, although it may appear on any part of the body, attacks the elbows and knees in most cases; and these are generally the first parts attacked.

The syphilitic disease *may* be met with on the elbows or knees, but this is only accidental and exceptional. It attacks by preference the inner rather than the outer aspect of the limbs. Psoriasis limited to the palms of the hands and soles of the feet (Psoriasis palmaria et plantaria) is generally, but by no means always, syphilitic.

8. *The colour of the patches.*—In both forms of the disease, the bright red colour, which is met with in simple inflammations of the skin, is wanting, the eruption having a dusky-red or coppery tint. The coppery colour, however, of the specific is usually, though not always, much more pronounced than that of the non-specific affection; and, as a general rule, it may be said that the former has a dusky-red, the latter a distinctly coppery tint. This difference in the colour is not so well

marked at the commencement of the eruption, because in this, as in almost all other forms of syphilitic eruption, the tint gets deeper as the eruption becomes more chronic.

9. *The dryness or moisture of the eruption.*—Ordinary psoriasis is almost invariably a perfectly dry eruption throughout, whereas some of the patches in the syphilitic form may be moist, or covered with crusts, or even in a state of ulceration.

10. *The appearance of the scales.*—Non-specific psoriasis is characterised by silvery-white, thick, imbricated scales, the thickness in some situations, as at the knees, being often very great (measuring sometimes as much as a third of an inch); but in these cases the colour is usually not quite so white. By scraping the surface a little, the silvery colour is more distinctly seen, because (amongst the lower and dirtier classes especially) particles of dirt accumulate in great abundance upon the patches. The scales of specific psoriasis are usually much thinner, and not so imbricated. Their colour is sometimes white and silvery, but often greyish, and occasionally very dark (Psoriasis nigricans).

11. *The sensations of the patient as regards itching.*—As previously pointed out, non-syphilitic psoriasis is usually accompanied by more or less itching at some period of its course, especially during the formation of fresh patches, and in a few cases the irritation is very distressing. Specific psoriasis, on the other hand, follows the law common to almost all the syphilides, and is often unaccompanied by itchy sensations.

12. *The occurrence of relapses.*—The course of non-syphilitic psoriasis is a pretty uniform one, appearing usually at first in the winter season, and often disappearing in summer, to reappear either the next or some succeeding winter or spring. As the disease becomes older, the relapses are more frequent, and each attack more severe than the one which preceded it, till at last, although the eruption is ameliorated in summer, it never disappears entirely. This, at least, is its usual course when not altered by treatment. On the other hand, when syphilitic psoriasis has once *completely* disappeared, *so that all trace of it is gone,* it is not nearly so apt to return again, although, while the eruption exists, new patches may appear from time to time. It is often, however, followed by other forms of syphilitic eruption, as, for example, by an outbreak of tubercles.

13. *The concomitant symptoms.*—One remarkable circumstance, with regard to non-syphilitic psoriasis, as already stated, is that it occurs usually in persons who are in comparatively good health. The syphilitic patient, on the other hand, frequently shows symptoms of a cachectic state of system. And syphilitic psoriasis is usually accom-

panied by other syphilitic symptoms, such as erythematous and papular eruptions, condylomata, sore-throat, &c. As an illustration of this point, the case of E. M'E. may be taken, who came to the Hospital for Skin Diseases, May 20, 1861, with syphilitic psoriasis assuming the guttate and circinate forms, these being situated principally upon the limbs, but not at all on the elbows or knees. The diagnosis of the syphilitic nature of this eruption was assisted by the concomitant symptoms, viz., slight trace of a chancre on the penis, chains of enlarged inguinal glands, deep fissures at the angles of the mouth, ulcers on the tongue and on the mucous membrane lining the lips and cheeks, crusts on the scalp, and enlarged posterior cervical glands.

14. *The effects of remedies.*—It must be known to all that mercury is a never-failing remedy for the removal of syphilitic psoriasis, an example of which is furnished by the case of Mrs. D., aged thirty-nine, who consulted me on the 3rd April, 1861 (the minutiæ of the case I am unable to give, as I write from memory, not having taken notes of it at the time), on account of syphilitic psoriasis in the shape of very distinct little coppery circles, covered with white scales. None of these circles were more than an inch in diameter, and they were situated principally on the extremities. After twelve calomel vapour baths, no trace of the eruption was left, with the exception of very faint red circles—all the scales, the coppery tint, and the elevation above the surface having disappeared. She was told to continue the baths, and, as she never returned, there can be little doubt that she was completely cured.

Arsenic, on the other hand, is the constitutional remedy *par excellence* in the treatment of the non-specific form of the disease, and to this a considerable proportion of the cases yield. As an illustration of this may be taken the case of Wm. M., which occurred at the Hospital for Skin Diseases under the care of Dr. Buchanan. This patient, a blacksmith, aged twenty-five, was admitted March 5, 1861, with psoriasis covering almost the whole body, though leaving intervals of sound skin between the patches, and it had existed more or less for five months. The joints were uneasy and painful, owing to the deep fissures which existed, and the hands were quite covered with the eruption, and so stiff and painful, that the patient was unable to open the door on the day of his admission. He was ordered five drops of Fowler's solution thrice daily, and the dose was gradually increased to fifteen drops. The exhibition of this dose soon occasioned slight pain in the epigastrium, and the conjunctivæ became suffused, so that it was diminished to six drops three times daily. On the 19th April there was merely redness of the skin left at the sites of the previous patches, and on the 26th almost all trace of the disease had disappeared.

Before leaving this subject, there is just one caution which must be given. There is no reason why a patient with a syphilitic eruption, may not, at the same time, be affected with non-syphilitic psoriasis; but, if the possibility of such an occurrence be borne in mind, an error is little likely to occur.

I have thus endeavoured to state clearly and simply the differential diagnosis of these two forms of disease which resemble one another in so many particulars, but which differ very considerably when one comes to consider the minutiæ—the circumstances attending their outbreak and subsidence, as well as their external configuration and appearance. It must be understood that the rules which I have laid down are not invariable, although I have expressed myself very guardedly with regard to many of them, and are subject to numerous exceptions.

A typical case of psoriasis can never be mistaken for a typical case of *Eczema;* but, when the silvery scales have fallen from the patches of the former, they may be mistaken for patches of dry eczema—that form of eczema described as eczema siccum or eczema squamosum. And this mistake is all the more likely to occur if a diagnosis is made after an examination of that part of the skin only which the patient selects for exhibition, and if no inquiry is instituted as to the course of the eruption. On examination of all the other parts of the affected skin, in cases of difficulty, there will generally be found some characteristic patches which remove all doubt. The scales on eczematous patches are thin and loosely attached, and are rarely silvery-white; those of psoriasis are thick, very adherent and silvery. Again, in eczema, the tint of the patches is usually brighter, and the itching, as a rule, more marked, while the eruption has no tendency to attack the extensor, but rather the flexor surfaces of the elbows or knees, a point which is of great value in arriving at a correct diagnosis. Then psoriasis is a dry eruption throughout, whereas an exudation on the surface of the skin or "leeting," as it is called, is one of the most characteristic symptoms of eczema, and is generally present at some period of its course. At the same time the surface has often a peculiar punctated appearance, which has been fully described under the head of eczema, and which is altogether wanting in psoriasis. Lastly, the constitution of patients affected with psoriasis is generally good, while eczema very frequently attacks weakly persons.

It is much to be regretted that Wilson has thought proper to change the name of psoriasis to *alphos,* and to make use of the former term to designate the variety of eczema to which we have just referred.

Without entering into the question of the appropriateness of the existing nomenclature of skin diseases, which, in many respects, few can defend, it must be at once apparent that, to attempt to alter a name, the meaning of which is so thoroughly settled, cannot but be fraught with disadvantage, and lead to much confusion—a confusion, illustrations of which I have already met with.*

Pityriasis (or erythema squamosum) exhibits the same points of difference from psoriasis as a dry eczema, with this exception, that it resembles psoriasis in two points in which eczema differs—namely, in the eruption being dry throughout, and in the absence of the punctated appearance of eczematous surfaces, while it differs from psoriasis in one point in which eczema agrees with it, namely, in the absence of any appreciable thickening or infiltration of the skin.

Pityriasis rubra acuta (Devergie) may be mistaken for a severe and extensive eruption of psoriasis, but the former differs from the latter in these points: it never occurs before the age of puberty; within a month of its appearance the *whole* of the skin from head to foot is usually covered with the eruption; there is an exudation like sweat from its surface; scales form in great abundance, are often of very large size, and are very easily detached, so that each morning a basketful may frequently be found in the bed. The eruption is sometimes complicated during its course by the formation of bullæ, and it is often fatal. At the same time it must be admitted that some cases, described as pityriasis rubra, are really instances of universal psoriasis (see article on pityriasis rubra).

Tinea circinata (ringworm of the body) bears much resemblance to the lepriform variety of psoriasis (Lepra—Psoriasis circinata); but in ringworm the eruption has no tendency to be symmetrical or to attack the elbows or knees; the scales on the circles of eruption are loosely attached, and not silvery; and, on examination of them with a microscope during the *advancing stages* of the disease, the parasite (Tricophyton), to which it owes its origin, may be detected. It is also contagious, giving rise in some cases to ringworm of the head (Tinea tonsurans), or to ringworm of the beard (Tinea sycosis).

(For the diagnosis of *pityriasis rubra pilaris* from psoriasis see page 312.)

The following tables give a brief *resumé* of the principal points discussed in reference to the diagnosis of psoriasis:—

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* Dr. Myrtle, for instance, evidently for this reason, attributes to Wilson views which he did not hold, when he says, "I differ from Erasmus Wilson when he states that eczema, in its chronic, dry state, is to be looked upon as psoriasis."—*Practical Observations on the Harrogate Mineral Waters*, by Andrew Scott Myrtle, M.D., p. 62. London: John Churchill & Sons. 1867.

DIAGNOSIS OF SYPHILITIC FROM NON-SYPHILITIC PSORIASIS.

Syphilitic Psoriasis.	**Non-Syphilitic Psoriasis.**
1. Eruption not usually very extensive.	1. Eruption sometimes covers the greater portion of the skin.
2. Usually occurs as a second stage of some other form of syphilitic eruption.	2. The patches assume the characters of psoriasis from the very first.
3. Some of the patches may be moist, or covered with crusts, or even in a state of ulceration.	3. A dry eruption throughout.
4. Patches usually small, and in the shape of round spots or patches, or circles, or segments of circles.	4. Patches often small, and circular, but frequently very large and irregular.
5. Eruption not usually on the elbows and knees; more on the inner than the outer aspect of limbs. When limited to soles or palms *generally* syphilitic.	5. Eruption on any part of the body, but *almost* always on the elbows or knees also.
6. Eruption in the chronic stage usually *distinctly* coppery in tint.	6. Patches of a dusky-red, or *light* coppery tint.
7. Scales thin; not so imbricated; often greyish.	7. Scales thick, imbricated, white, and silvery.
8. Rarely itchy.	8. Sometimes not itchy, occasionally intolerably itchy; generally slightly so, especially when new patches appearing.
9. May last months, or even a year or more, when no treatment employed.	9. Often of five, ten, fifteen, twenty, or thirty years' duration, or even lasts almost a whole life-time.
10. Almost always commences after puberty, and usually after twenty.	10. Many cases commence before puberty.
11. Can often be traced to a hard chancre.	11. Can often be traced to hereditary taint.
12. Patient often cachectic, and concomitant symptoms detected; *e.g.*, roseola syphilitica, lichen syphiliticus, condylomata, sore-throat, alopecia, &c.	12. Patient generally in comparatively good health, with the exception of the eruption.
13. Removed almost invariably by mercury.	13. In many cases removable partially or entirely by arsenic.
14. A relapse not usual after *all trace* of the first eruption has *completely* disappeared.	14. Relapses are the rule, and are often very numerous.

DIAGNOSIS OF DRY CHRONIC ECZEMA (ECZEMA SQUAMOSUM) FROM PSORIASIS.

Eczema Squamosum.	Psoriasis.
1. Scales thin, loosely attached, not silvery.	1. Scales thick, imbricated, very adherent, silvery.
2. Patches of a more lively red tint.	2. Patches dusky-red or coppery.
3. Itching a very prominent symptom.	3. Itching not so marked as a rule.
4. No tendency to attack the extensor, but often the flexor surfaces of the elbows and knees.	4. May attack any part, but the extensor surfaces of the elbows or knees rarely escape.
5. Generally exhibits moisture at some period of its course.	5. A dry eruption throughout.
6. Patient often debilitated or even strumous.	6. Constitution generally good.

DIAGNOSIS OF CHRONIC ERYTHEMA (PITYRIASIS) FROM PSORIASIS.

Five points of difference. These are the same as Nos. 1, 2, 3, 4, and 6 in the diagnosis of eczema squamosum from psoriasis, and need not therefore be repeated. (See above.)

DIAGNOSIS OF PITYRIASIS RUBRA ACUTA FROM PSORIASIS.

Pityriasis rubra acuta (*Devergie*).	Psoriasis.
1. Never occurs before puberty.	1. First appearance of eruption often as early as the sixth or seventh year.
2. Within a month the *whole* cutaneous envelope usually attacked.	2. The whole cutaneous envelope *very* rarely attacked.
3. Exhibits an exudation like sweat.	3. A dry eruption throughout.
4. Scales thin, not silvery, often of large size (sometimes nearly size of palm), loosely attached.	4. Scales thick, imbricated, silvery, of small size, as a rule.
5. Sometimes complicated during its course with bullæ.	5. Never complicated with bullæ.
6. Often fatal.	6. Never fatal.

DIAGNOSIS OF TINEA CIRCINATA FROM PSORIASIS.

Tinea circinata (or *Ringworm of the Body*).	Psoriasis circinata (or *Lepra*).
1. Not symmetrical.	1. Symmetrical.
2. No special tendency to attack elbows and knees.	2. Special tendency to attack elbows and knees.
3. Scales thin, loosely attached, not silvery, contain spores and tubes of the parasite.	3. Scales thick, imbricated, very adherent, silvery, and contain no parasite.
4. Contagious.	4. Not contagious.

The **prognosis** is almost invariably favourable in this respect, that the eruption is very rarely fatal, and occurs generally in those whose constitutions are sound. Indeed, apart from the disfigurement which it occasions, the itching by which it is sometimes accompanied, and the stiffness of the joints and pain from fissures with which it is sometimes associated, it is usually quite harmless.

That rare form of psoriasis in which the whole skin is implicated is said to be very incurable, and may even have a fatal termination (Hebra).

The eruption can generally be removed by appropriate measures for the time, and first attacks are much more amenable to treatment than subsequent ones. That form of the eruption described as psoriasis circinata (Lepra) is more readily removed than any other, for the healing of the eruption in the centres of the patches, which gives rise to the circles, shows that there is a natural tendency towards cure. Patches on the head and face are, for some inexplicable reason, more readily removed by local applications than those on any other part—a fact first noticed by Hebra, and which I have frequently been able to verify. Another favourable circumstance is that, when the eruption disappears, it leaves no traces whatever, at least no cicatrices, although in some instances, a pigmentation of the skin is left for a time at the sites of the previous patches.

The most unfavourable feature in the case is the tendency to relapses. These are quite the rule, and occur probably in 90 at least of every 100 cases, no matter what treatment is adopted; so that we can never speak of a cure—strictly so called—of this disease. As far as my experience goes, the most permanent cures are from several courses, during several successive summers, of some of the mineral waters to be referred to shortly.

A question of great importance, and one which I have often been asked is—May a patient affected with psoriasis marry? Now there can be no doubt, as before mentioned, that this disease is hereditary, so that it may descend to the patient's family; but then it is not contagious, so there is no fear of a man communicating it to his wife, or *vice versâ,* and thus the patient affected with psoriasis is in this respect quite on a different footing from a patient affected with syphilis. I am at present attending a lady who has had psoriasis for a number of years, whose husband became affected with the same disease about six months ago. But this is certainly not an instance of contagion, but merely a coincidence, else why should he only become affected after being exposed to contagion for a number of years? Again, in the case of syphilis, if the patient delays a year or two and appropriate treatment is adopted, he is less likely to see the disease reproduced in his offspring; whereas in psoriasis, no matter what treatment is pursued, and no matter how long the patient delays, it is just as likely as before to prove hereditary. If then a person affected with psoriasis intends to marry, no delay is of any use, unless he is severely attacked at the time, and wishes the eruption temporarily modified by treatment before marriage. In the opinion of most observers it must be held that, while it would be preferable if the patient had not the eruption, there is no sufficient reason why he should not marry. Indeed, if all people who were only as much disqualified from other causes were forbidden to marry, there would be very few marriages at all.

Treatment.—It is not my intention to enter into an elaborate statement of all the remedies, internal and external, which have from time to time been used in the treatment of psoriasis, as it will probably be more serviceable to direct attention chiefly to those which I have myself found of use, and which I am in the habit of employing. And it may be stated at the outset, what must be the opinion of all who have had much experience of skin diseases, that psoriasis requires the exercise of much patience and perseverance in its treatment, and is, as a rule, not nearly so readily amenable to remedies as many other eruptions.

In prescribing a course of *constitutional* treatment, the fact must be borne in mind that, as far as we yet know, there is no medicine which is capable of eradicating the predisposition to the disease, and our efforts must therefore be directed towards the removal of the existing attack, and of its exciting causes. Before subjecting our patients, therefore, to a course of specific treatment, it is necessary to find out, if possible, these exciting causes, and to endeavour to remove them. Thus, one man, predisposed to psoriasis, may lead a very sedentary life, be much harassed by business, and his mind may be constantly on the rack. He takes his meals at irregular intervals and sleeps badly. His digestive and nervous systems are deranged, and out comes his enemy. It would be injudicious in most cases to subject this man to a course of alterative treatment, in the first instance; but we make him give up business for a time; we send him away for change of air—we shall say to Harrogate, if it is the season, and there is plenty of cheerful society, for this has a very beneficial effect upon such cases. The torpidity of his digestive organs is corrected by a judicious course of Harrogate waters, or, what is nearly as effectual, by the administration of some aperient medicine in the shape of cream of tartar and sulphur, or a pill containing a little calomel: he takes a course of baths, gets plenty of fresh air, takes his meals at regular hours, goes early to bed, rises early in the morning, and has nothing to harass or worry him. It is wonderful, after a few weeks, in what a different state of health he returns. In some cases the eruption has disappeared or is fading; but, if not, it is then time to prescribe an alterative medicine, such as arsenic.

Wilson cites a case of this kind, that of a surgeon who was affected with lepra, complicated with debility and malassimilation, which was removed by the mere administration of a course of nitro-muriatic acid and gentian.*

In fact, we shall often find, if we examine our patients carefully, that, though, as a rule, their constitutions are sound, the eruption has been called forth in consequence of their health being disordered or below par; and this we must always, in the first place, endeavour to correct. In doing so we must be guided by general principles. If we have succeeded, and the eruption persists, we must then make use of the so-called alteratives.

I have not much faith in the internal administration of tincture of cantharides, oil of turpentine,† and decoction of dulcamara, but balsam of copaiba is occasionally of service. Hardy‡ in his excellent work on diseases of the skin states that he discovered its virtues accidentally in administering it on account of gonorrhœa to a patient who happened also to be affected with psoriasis, when, to his surprise, the eruption and the discharge disappeared together. He recommends that it should be given to the extent of from ʒi to ʒiss per day, while Simms,§ who also speaks highly of it, begins with 20 minims of the drug (mixed with liquor potassæ and mucilage), and gradually increases the dose until the eruption disappears, or until the characteristic copaiba rash comes out, when the skin disease sometimes speedily vanishes.

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* *On Diseases of the Skin*, by Erasmus Wilson, F.R.S., 4th edition, p. 308.

† Highly prized by Radcliffe Crocker.

‡ *Leçons sur les Maladies de la Peau*, par le Docteur Hardy. Ed. ii., vol. i., p. 119. Adrien Delahaye. Paris, 1860.

§ *Brit. Med. Journ.*, March 13, 1869, p. 235.

The following, and many similar instances could be cited, illustrates the value of this remedy in some cases. A young girl, about eleven years of age, from Inverness-shire, came to me on the 30th December, 1875, suffering from psoriasis, of three years' duration. Her family and personal history were good, except that she was rather delicate as an infant, and she was not aware of any of her relations being similarly affected. The eruption first came out during the winter of 1873, became worse during the following summer, but entirely disappeared in autumn. It returned, however, in the spring of 1874, and again disappeared in autumn, and the third outbreak commenced in the spring of 1875, but did not disappear in autumn as formerly. When admitted, the eruption was much in the same state as it had been during the previous six months, neither improving nor getting worse: it was extensively diffused over the body, being specially marked, however, upon the extensor surfaces of the arms and legs, and upon the head. The patches presented the dry and more or less circular character of psoriasis, and were covered with silvery scales, beneath which the skin was deeply reddened. The scalp seemed literally covered with dry shining crusts, matting the hair together to a considerable extent.

Treatment was not commenced till the 8th January, 1876, when three copaiba capsules daily were prescribed. On the 20th of January, there being no improvement, the number of capsules was increased to six. Almost immediately thereafter improvement set in in the face and arms, the legs and body responding rather more slowly. By the 5th March the eruption had entirely disappeared, leaving only the usual slight pigmentary stains, and on the 28th, when she was dismissed, these were rapidly fading.

The internal administration of tar* and also of carbolic acid† is likewise occasionally of service, and the same remark applies to alkalies, which, however, are chiefly used in gouty or rheumatic subjects, or when there is a tendency to acidity of the stomach and to the deposit of lithates in the urine, or when the patient is much addicted to the use of stimulants.

The alkali most used and greatly praised by Dr. A. T. Thomson, the late Dr. Joseph Bell * (who published a series of cases of psoriasis which were benefited by it), and others is liquor potassæ, which is given in doses of from 20 to 30 minims thrice daily in a large quantity of water or milk, or, as the late Dr. Nelegan recommended, in table-beer or veal broth.

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* ℞ Picis liquid, opt., ... ℥iv.
Spt. rectificat., ... ʒiv.

Sig., ʒss to ʒi in treacle or golden syrup thrice daily. Begin with a dose of a few drops, and omit it for a time if it impairs digestion, or produces a red rash over the body.

† ℞ Acidi carbol. cryst., ... ʒiij.
Glycerini (Price), ... ʒij.
Aquam, ad . . . . ℥vi. —*M.*
Sig., ʒi thrice daily in a glass of water before food.

The late Dr. Easton, of Glasgow, found much benefit from the use of the acetate of potash—which is, however, not an alkaline but a neutral salt—in doses of ʒss thrice daily.

The carbonate of ammonia is the alkali from which I have derived most benefit. It must be made up in small quantities, and kept in a well-stoppered bottle, as it loses strength rapidly when exposed to the air; and the apothecary must be warned to give an article of full strength, and one which has been carefully prepared. It should be given in doses of 10 grains, gradually increased up to 30 or 40, and largely diluted with water. Sometimes it will be found of service to combine it with a preparation of arsenic,† or with colchicum if there be a gouty tendency. The latter may be added in doses of about 5 or 10 drops of the tincture.

In persons addicted to the abuse of ardent spirits, the eruption is apt to appear in a very aggravated form, and I have seen it very rapidly improved by a course of carbonate of ammonia. In nervous persons, too, whose nervous system has been acted on by some depressing cause, a course of carbonate of ammonia often benefits the eruption, especially when combined with change of air and scene, and cheerful society. Where the cause of the outbreak is undoubtedly nervous debility, a course of strychnia may be tried, in doses of $\frac{1}{24}$ to $\frac{1}{12}$ of a grain thrice daily.

The *iodide of potassium* in large doses, first recommended by Drs. Greve and Boeck, has recently been brought prominently before the profession by Dr. Haslund. The dose to commence with may not exceed gr. 10, thrice daily, but this is rapidly increased until the eruption begins to fade, which may occur when ʒij, but occasionally not till ℥i or more is taken daily. When improvement begins, the disappearance of the eruption is usually rapid. Of fifty cases so treated (the duration of the course varying from seventeen days to eleven weeks), forty were cured and four considerably improved, while in six there was no result. The total quantity taken varied from

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* *Glasgow Med. Journ.*, January, 1861, p. 459.

† ℞ Sol. Fowleri, ...	ʒij.
Ammoniæ carbonatis, ...	℥ss.
Potas. acetatis, ...	℥i.
Syrupi, ...	℥ss.
Aquam, ad	℥xij.

Sig., A tablespoonful in a large wine-glassful of water, twice daily, after food.

about 5 to 50 ozs.* It is undoubted that this treatment is often successful, although it does not prevent relapses, and that the phenomena of iodism are less likely to occur with large than with ordinary medicinal doses. But for all that it would be very unwise to subject a patient to this treatment unless he is under the constant supervision of his medical attendant.

The use of *arsenic* in the treatment of psoriasis is so well known, and so thoroughly appreciated by those who have had much experience of it, that it is unnecessary for me to dwell upon it. Fowler's solution is the preparation which I am most in the habit of using, and I do not think that any other form of arsenic has a more beneficial effect. It may be given to a child of seven years of age in doses of two or three minims, to an adult of five or six, thrice daily during or immediately after food. It agrees better with the stomach if it is given in a bitter infusion—as infusion of cascarilla or gentian. The patient should be warned to be careful of catching cold while using it, to take a nourishing but unstimulating diet, and to attend to the state of his bowels. Every three or four days the dose should be increased by a minim, till the disease begins to yield or till the medicine begins to disagree. I am convinced that arsenic would be found much more serviceable if physicians would continue it steadily for months, and not be induced to stop it without some very pressing reason. In some cases Asiatic pills may be used instead of Fowler's solution—namely, when the patient prefers pills, and when one wishes to conceal from him what he is taking, for Fowler's solution is well known to the public to be a preparation of arsenic. Occasionally, suppositories of arsenious acid (gr. $\frac{1}{30}$ to begin with) may be substituted for its administration by the mouth.

In obstinate cases the subcutaneous injection of arsenic is to be recommended, the preparation which I generally use being the liquor sodæ arseniatis, for, although Fowler's solution is undoubtedly more powerful, it is apt to irritate and inflame the subcutaneous cellular tissue unless great care is taken. The following case is a good illustration:—John M., æt. 19, sailor, was admitted to the cutaneous wards of the Glasgow Western Infirmary on December 19, 1883, suffering from psoriasis of fifteen years' duration.

The eruption, at the time of his admission, was very extensive; scarcely a spot of sound skin was to be found on his whole body. The palms of his hands and the soles of his feet were deeply fissured—so much so that he was quite unable to use his hands, or to walk any distance. The flexures of the elbows and knees were deeply fissured, and any attempt at extension gave rise to great pain. The trunk of his body was covered with large silvery flakes, and the skin underneath was somewhat inflamed. The head and face were badly affected, and for some time he could hardly open his eyes.

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* *Viertelj. für Derm. und Syph.*, 1887, 3 Heft.

During the fifteen years he had had the disease it had never disappeared entirely, and when it was at its best it was confined pretty much to the elbows and knees. He never was so ill before, and this aggravation was of about three weeks' duration.

He had tried various remedies, and had been under many different kinds of treatment, but with very little effect.

When admitted, in addition to regulating his bowels, he was put upon half-drachm doses of pix liquida. This was continued for about six weeks, being pushed to the point of disagreeing, and no improvement resulted, but rather the reverse. On 10th February it was stopped, and on the 13th the hypodermic administration of liq. sodæ arseniatis (B.P.) was commenced in doses of ♏x. daily. Being found to agree quite well, and producing no local discomfort, it was gradually increased to about ♏xx. daily, injected into the buttock, the skin having been previously frozen.

In four days after beginning this treatment the patient observed a distinct improvement, nearly all the scales having fallen off his body, leaving patches of slightly inflamed skin. On 12th March he was shown to the clinical class almost entirely free of the eruption, only a few small spots remaining on the front of his legs. His skin looked quite healthy, and his hands and feet had quite recovered. About an ounce and a quarter of the solution of the arseniate of soda was given in all, and no unpleasant symptom was developed, his general health having all along been very good. (Case reported by W. L. Strain, M.B., Resident Physician.)

There can be no doubt that arsenic is the most valuable internal medicine which we possess in the treatment of psoriasis, and that few cases, in which it is patiently and perseveringly employed, altogether resist it, while in many instances the eruption completely vanishes. The more recent the eruption, the more readily is it acted upon by arsenic as a rule, while chronic cases, in which there have been many relapses, are sometimes very rebellious. If a patient has had many relapses, in each of which arsenic has been used, it is very apt to lose its effect; but, if it is discontinued for a year or two, it may then sometimes be readministered with good effect.

In a different class of cases *cod-liver oil* is of use. By the majority of dermatologists this medicine is not even hinted at as serviceable in this complaint, while Hebra, of Vienna, only mentions it in order to state that it is useless. There are some persons, however, who are greatly benefited by it. In those rare cases in which the eruption appears in strumous persons, there can be no doubt theoretically that cod-liver oil should be used, while I have myself had practical demonstration of its value. If my readers will refer to the section on etiology they will there find the account of a remarkable case of very extensive and old-standing disease occurring in a hunchback, where cod-liver oil dissipated the eruption almost entirely in six weeks. The following case likewise illustrates this point, although in it the oil was not given alone:—A little girl, aged six, was brought to me by her mother on the 20th April, 1865, for an extensive and unmistakable eruption of psoriasis, which had commenced about eight months previously, was most abundant on the arms and legs, and, next to these parts, on the head and face. The patches were considerably elevated, dusky-red, covered with silvery scales, and itchy. Her mother informed me that "she was always thought weak in the mind," and her appearance quite coincided with this statement. She was, moreover, delicate looking. The glands around the lower jaw were enlarged, the tonsils greatly hypertrophied, the nostrils stuffed, and she had a bronchitic cough of old standing. She was ordered three warm baths to remove the scales. The following ointment was to be rubbed into the patches night and morning, and washed off every second night in a warm bath:—

℞ Picis liquidæ, ...	ʒij.	
Ung. zinci oxidi, ...	℥ij.	
Olei rosæ, ...	♏vi.	—*M.*

and half a teaspoonful of syrup of the iodide of iron was given in a tablespoonful of cod-liver oil thrice daily.

27th April.—Eruption much paler, especially upon the arms, and patches not so raised—scales nearly gone.

12th May.—Eruption almost quite gone from the head and face; just traceable on the arms; more distinct on the body.

30th May.—Eruption all but disappeared.

But there is a far more extensive class of cases—those, namely, in which the patient, though constitutionally sound, is debilitated either by previous disease, insufficient diet, over-lactation, or the like, in which cod-liver oil has in my hands occasionally proved of great service.

The finest pale oil is the best preparation, of which a teaspoonful may be given to an adult thrice daily at first, and the dose gradually increased till four to six tablespoonfuls are taken per diem. It is most likely to agree if taken after food; but many who are accustomed to take it, and with whom it agrees well, should take it in the middle of the interval between each meal, when it may be looked upon in the light of a supplemental meal.

On no account should the patient be allowed to stop it for a slight reason; and often, on inquiry, it will be found that, when it is said to disagree with the stomach, it in reality agrees quite well, but is disagreeable to the taste. Even if the patient loses his appetite, or is sickened by it, it should not be omitted entirely, but only for a few days, and then given at first in a smaller dose and immediately after food. If the fine pale oil disagrees, one of the other varieties may be tried, or Carnrick's peptonised cod-liver oil and milk, or Mackenzie's compound cod-liver oil emulsion, which is especially suited to children.

Very successful results may often be obtained, in cases where one is in doubt whether cod-liver oil or arsenic is indicated, by combining the two.

Before leaving the internal treatment, I transcribe, from a previous communication, four rules which must be attended to in the employment of the so-called alterative medicines, as everything depends on their proper administration:—

1. Let the dose, at first small, be gradually increased till the medicine disagrees, or till the disease begins to yield, and then let it be gradually diminished.

2. If the medicine disagrees, do not omit it altogether without very good reason, but try it in small doses, or in another form; or omit it for a few days till the bad effects have passed off.

3. To give it a fair trial, it must be continued for a considerable period of time, because in some cases the eruption does not disappear till after it has been administered for many weeks.

4. Do not permit the patient to give up taking the medicine till some weeks have elapsed after the complete disappearance of the eruption.

Dr. Byrom Bramwell has recently found much benefit from thyroid feeding in this disease, and, although our experience of it is not yet sufficient to enable us to form a definite opinion with regard to it, it is certainly worthy of trial, and should be given in the same doses as for myxœdema.*

Attention to diet and regimen is of great importance, in conjunction with internal remedies. If the eruption is very extensive, and particularly if the patches are *much inflamed and very itchy*, a sparing and unstimulating diet is indispensable, until it subsides into a chronic state. If the digestive organs are deranged, still greater care must be taken, and those things which appear to be most readily digested must be selected, the physician being guided by general principles. If the patient seems to be in perfect health, a simple mixed animal and vegetable diet in moderate quantity is generally advisable, fresh bread, potatoes, oatmeal, dressed dishes, pastry, pickles, spices, strong tea, and coffee being interdicted, and wine, spirits, and malt liquors either suspended entirely for a time or allowed very sparingly.

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* See Dr. Bramwell's paper on "The Treatment of Psoriasis by the Internal Administration of Thyroid Extract." *Brit. Med. Journ.*, Oct. 28, 1893, p. 933.

In 1867, Dr. Passavant, of Frankfort, published a paper in the *Archiv der Heilkunde* (p. 251), on the treatment of inveterate cases of psoriasis by means of a meat diet. He had been himself a sufferer from the disease for a quarter of a century, and had tried all the known remedies unsuccessfully, and yet he speedily cured himself by a course of Bantingism—*i.e.*, by a meat diet. Dr. Parks also tells us that he witnessed a rapid recovery without medicine, in a similarly obstinate case, by the same system of dieting. So that, when other remedies fail, we are fully justified in giving a trial to Dr. Passavant's method, although we cannot frame a very satisfactory theory as to its *modus operandi.*

In strumous cases, or where the patient is debilitated by over-lactation or the like, a generous diet is to be recommended, and malt liquors and stimulants in moderation are often found to be of great benefit, provided the eruption is not much inflamed.

In the treatment of this, as of many other chronic complaints, as previously hinted, the patient should be urged to eschew a too sedentary mode of life, to take moderate, regular, open-air exercise, to keep early hours, and, if his mind has been much and for a long time harassed by business or other cares, to try the effects of perfect mental quiet, combined with change of air and scene. He should do everything in his power, in fact, to raise his standard of health to, or to maintain it at, par.

Local treatment is not so much relied upon in this country for the cure of psoriasis as on the Continent, and especially at Vienna, where it is employed almost exclusively; and there can be no doubt that, when properly used, it is of much value. I say properly used, for physicians err, not so much in the applications which they use, as in the careless manner in which they sometimes allow them to be applied.

If the patches are much inflamed, and very hot or itchy, soothing applications must be employed. Warm baths are very useful at this stage, especially if two or three handfuls of starch are added to each bath, or about a pound of gelatine or glue previously dissolved in boiling water. Instead of, or, what is better, in addition to the use of emollient baths, soothing ointments may be used. Cold cream, cucumber ointment (Neligan), the benzoated oxide of zinc ointment, ointment of the carbonate or subacetate of lead, or a mixture of zinc and almond oil, the formula for which is appended,[*] may be employed with advantage. Whichever of these is used, it should be rubbed pretty firmly on the patches with the palm of the hand. Three or four applications may be made during the day if convenient, and, if warm baths are used in addition, one of the applications should be made immediately after each.

Instead of the above, the hydropathic treatment may be tried, and is often of use. The following is the mode in which I am in the habit of administering it:—On a firm mattress a sheet of M'Ghie's oil-paper or other material, to prevent the wetting of the mattress, is placed; then a couple of straps are laid across the bed; above this a dry blanket is spread out, and finally a sheet wrung out of cold water. The patient, in a state of nudity, is made to lie down on this, and it is then wrapped tightly and carefully round him, so that every part of the affected skin is, if possible, in contact with it, and the blanket is similarly applied. The whole is then kept in position by the two straps, and the patient is covered by two or three blankets thrown loosely over him. In this state he is allowed to remain for two or three hours, during which time he is allowed to drink water *ad libitum* to promote perspiration; and the process is completed by making him jump into a cold bath, and then dress himself and take a sharp walk. I am in the habit of recommending this treatment to be repeated every evening, and to be continued as long as any improvement takes place. Not only does the hydropathic treatment remove the acute inflammation of the patches, but it also in some cases removes the eruption entirely, and may therefore be used even when the patches are chronic from the commencement.

But we shall suppose that the eruption is chronic from the first, or that, by means of one or other of the above methods of treatment, the acute inflammatory symptoms have subsided, and the eruption remains stationary, what are we to do?

In the first place, we must remove the scales; and this is done by means of warm baths, or by the hydropathic treatment, and thorough rubbing with rough towels after each; or by taking two or three Turkish baths, with thorough shampooing; or by rubbing the parts with pumice-stone or Brooke's soap, or with a piece of moist flannel dipped in sand. This having been done, and the morbid surfaces being fully exposed, we proceed to the application of local stimulants and alteratives.

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[*] ℞ Pulv. zinci oxidi,
Olei amygdalarum, āā, ... ℥i.
Unguenti simplicis, ... ℥ss.
Olei rosæ, ... gtt. i.
Cochinillini, ... gr. i. —*M.*

In the front rank must be placed *chrysarobin*, which was introduced by Balmanno Squire in 1876.* It may be used in the form of an ointment, the medium strength being 10 grains to the ounce.

℞ Chrysarobin, ...	gr. x.	
Adipis præparatæ, . . .	ʒv.	
Lanolini purissimi (Liebreich) ad .	℥i.	
Sol. calcii bisulphurosi, . .	2°/$_0$	—*M.*

The bisulphide of lime is added to the chrysarobin ointment to make the mixture acid, and thus prevent the chrysarobin from combining with alkalies, and forming alkaline salts of chrysophanic acid; it also renders it less irritating. Unna sometimes adds to this ointment 2 per cent. salicylic acid and 10 per cent. of ichthyol. In children or on parts such as the face, where the skin is delicate, it may be wise to begin with an ointment of gr. v to the ℥i. It should be rubbed into the affected parts night and morning, and the patient should always be warned—1st, that it will stain indelibly anything with which it comes in contact, so that old underclothing should be worn next the skin; and 2nd, that it often inflames the skin—not on the patches, but round about them—in which case it should be applied more gently, or omitted for a few days where this has occurred. At the same time, it must be admitted that the more readily the skin is irritated by the remedy the more likely is it to prove effectual. In some cases, a much stronger ointment may be used—even 2 drachms to the ounce—but it is never advisable to begin with such a powerful application. When the medicine has removed the eruption and, at the same time, inflamed the skin around the seat of the former patches, these are very curiously demarcated from the surrounding reddened parts by retaining the colour of the normal skin.

In order to avoid the staining of the clothing, Unna's chrysarobin, or chrysarobin, mercury, oxide of zinc, and perchloride of mercury plaster may be used, or the method advised by M. Besnier (which is a modification of that recommended by Ausspitz) may be employed. After the scales have been removed, a mixture of chrysophanic acid and chloroform (15 per cent.) is painted over the patches with a large flat brush. The chloroform evaporates rapidly, leaving the chrysophanic acid as a deep yellow coating. Whenever this dries, which it does almost immediately, it is fixed by giving it a coating of traumaticin (*i.e.*, purified guttapercha, 1 part; chloroform, 10 parts) with another brush. In a few days the application begins to peel off, and its complete removal may be facilitated by washing with soap and water and rubbing with pumice-stone, after which the remedy is reapplied. When chrysophanic acid is going to prove beneficial, improvement generally takes place within a few days, and often there is a speedy removal of the existing manifestations; but it has no power to prevent relapses, or new crops of eruption. Experiments have proved that, when applied to one-half of the body, it often removes—though more slowly—the eruption on the other half, so that it has a constitutional as well as a local action. This induced my friend, Dr. Napier, to suggest its internal administration, but it is so apt to derange the digestive organs, that I have been compelled reluctantly to refrain from this method of employing it.

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* *Brit. Med. Journ.*, Dec. 23, 1876.

Instead of chrysarobin, *anthrarobin* may be tried; it is a much milder preparation, but not nearly so generally useful.

Another new remedy is *pyrogallol,* which was first, I believe, recommended by Jarisch, and afterwards by Kaposi, Thin, and others. A 10 per cent. ointment is generally employed :—

℞ Pyrogallol,
Adipis præparatæ, āā, . . . ʒi.
Lanolini (Liebreich), ... ℥i. —*M.*

This may be applied night and morning after removal of the scales, but suspended for a time if it irritates the skin much, and I have often used it with advantage. It should never be applied to an extensive surface, and is therefore only suitable in the treatment of limited eruptions, because it is absorbed and may produce fever, prostration, vomiting, diarrhœa, and strangury, with olive coloured urine. In one of my own cases, treated in the Western Infirmary, these symptoms occurred in a marked degree, and for a few days gave rise to much anxiety. Death even has resulted from its incautious use. Neisser * reports the following case :—"The patient, a strong young man, aged 34, attacked with universal psoriasis, two hours after one-half of his body was rubbed with rhubarb ointment (for comparison) and the other with pyrogallic acid ointment, felt himself very uncomfortable; then followed shivering, malaise, vertigo, collapse, torpor, coma. The temperature was 40°·1 C. (104°·2 F.); pulse, 96 to 120; urine very dark, free from albumen. Shortly before death, which followed in eighty-four hours, the urine, which, during the whole duration of the illness, only amounted to 1,600 cubic centimetres, showed the highest degree of hæmoglobinuria. The *post-mortem* examination confirmed the diagnosis of dissolution of the blood." On this account I always warn the patient against using it too freely, and never prescribe more than an ounce of ointment at a time. This remedy may also be used like chrysophanic acid along with traumaticin, a 10 per cent. solution of pyrogallic acid in ether being employed.

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* *Zeitschrift für Klin. Med.*, bd. i., 88. Quoted from the *London Medical Record*, Feb. 15, 1888.

Tarry preparations are often of service, although they act more slowly than the remedies last mentioned.

Of these, some prefer common tar (pix liquida), others the oil of cade (Oleum cadini, manufactured at Aix-la-Chapelle), or oleum rusci (obtained from the bark of the white birch). Hebra's mixture of "tinctura saponis virdis cum pice"* is frequently of service. Whichever of these is used should be rubbed firmly into the eruption, and the application repeated night and morning, after the previous one has been washed off with soap and tepid water. During the treatment by means of tarry or unctuous applications to a large extent of surface, the patient should be made to wear a woollen dress next the skin; and he should be warned not to change it oftener than once a fortnight, as a dress impregnated with the application keeps the skin in an atmosphere of it, and is beneficial.

Sometimes the application of tar is not well borne, and I have known a single application greatly aggravate the inflammation of the skin, producing a severe dermatitis; and the unfortunate circumstance is, that one is often unable to tell beforehand in what cases it is likely to occur. For this reason it is generally better to begin the tar treatment cautiously, and to use at first a diluted preparation in preference to the pure tar. The incorporation of tar with an ointment is a very good way of diluting it, rendering it more agreeable to the patient, and less likely to exite inflammation. It may be incorporated in varying proportions with zinc ointment, or with a mixture of powdered oxide of zinc and almond oil;† or the common tar ointment may be used. Those who are familiar with the use of tarry preparations in the treatment of eczema, and of the great benefit which is derived from them in chronic cases, will be much disappointed at first to observe that psoriasis is very much less under their influence, and that they act very much more slowly upon the latter. I was particularly struck by this in a case of psoriasis of the elbows, combined with eczema of other parts. I ordered the "tinctura saponis viridis cum pice" to be rubbed upon both eruptions twice daily, and in a few days the eczema had all but disappeared, while very little impression had been made upon the psoriasis. My object in mentioning this is, not to decry preparations of tar in the treatment of the latter, but only to warn those who are making use of them that, as a rule, they require to be persevered with for a very much longer time than in cases of eczema.

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* ℞ Saponis mollis,
Picis liquidæ,
Sp. rectificati, āā, ... ℥i. —*M.*

† ℞ Olei cadini (Aix-la-Chapelle), . . ʒvi.
Ung. simplicis,
Pulv. oxidi zinci,
Olei amygdalarum, āā, . . . ℥i.
Olei rosæ, ... ♏vi. —*M.*

It is well to know that, when tar is rubbed upon the skin, it is to a certain extent absorbed, and circulates through the body; so that when a large extent of surface is under treatment, and particularly if the tar is rubbed very firmly into the skin, disagreeable symptoms may be induced, such as nausea, vomiting, diarrhœa, and feverish symptoms. The matters vomited, the stools, and the urine have a green or black appearance, owing to the presence of the colouring matter of the tar. These symptoms, however, rapidly subside if the treatment is omitted for a few days, and diuretics and purgatives are given to cause increased excretion by the kidneys and bowels.

Tarry preparations are not so convenient to apply to the head, owing to their glueing the hairs together; or to the face, owing to the discoloration and consequent disfigurement which they produce. I am therefore in the habit of applying to these parts one or other of the lotions or ointments, which I am about to mention, and of only using preparations of tar when the others fail or when the inconveniences just alluded to are of no consequence.

Amongst these may be mentioned an ointment of creosote * as recommended by Squire in the *Medical Times and Gazette* (Oct. 17, 1868), and lotions containing carbolic acid † and liquor carbonis detergens.‡

One of the best applications—one which I have used with great advantage, and which was much employed and justly praised by Hebra—is soft soap (potash soap, black soap, sapo mollis), or what is better, a solution of it in water§ or spirit.‖ These require to be rubbed into the roots of the hair, and on the spots on the face, very firmly every night, or, if convenient, every night and morning, and washed off as seldom as possible. I have noticed, an observation which was first made by Hebra, that the eruption on the head and face is much more readily removed by local measures than when it is situated on other parts, and that the above treatment generally removes the eruption from the head in a comparatively short time.

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* ℞ Creosoti (pùr), ... ʒi.
Ceræ albæ, ... ℥ss. —*M.*

† ℞ Acidi carbolici cryst., ... ʒij.
Glycerini (Price), ... ʒiv.
Spiritûs rectificati, ... ℥vss.

‡ ℞ Liq. carbonis detergentis, . . . ℥iss.
Glycerini (Price), ... ʒiv.
Aquæ destillatæ, ... ℥v. —*M.*

§ ℞ Saponis mollis, ... ʒi.
Aquæ bullientis, ... ℥ij.
Olei Citronellæ, ... ʒss.
Solve et cola per chartam.

‖ ℞ Saponis mollis, ... ʒij.
Spiritûs rectificati, ... ℥i.
Sp. lavandulæ, ... ʒi.
Solve et cola per chartam.

Hebra recommended the following modification of Pfeuffer's treatment in cases of extensive eruption; but I have not used it often myself, owing to the pain which it produces, and the necessity of confining the patient to bed. This consists in rubbing soft soap into the whole of the eruption twice daily for six or eight days, each patch during that period being once rubbed so hard as to remove the scales entirely and cause slight bleeding. The patient lies in bed all this time enveloped in blankets, and for three or four days after it. He then takes a warm bath and dresses himself. Hebra remarked with regard to this treatment that it is only successful in the minority of cases, that it often requires to be repeated, and that it may be combined with one of the other methods of local treatment with advantage.*

Ointments containing *mercury* are often of great value; but they are more applicable to the treatment of limited eruptions, as it would be unsafe to apply them for any length of time to an extensive surface, owing to the danger of their being absorbed, and producing salivation —an occurrence which is not only to be avoided for its own sake, but which has the additional disadvantage of tending to produce a more copious eruption, owing to the depression of the general health which is thereby induced. There is no reason, however, why, in extensive eruptions, one of these ointments should not be applied to certain parts, such as the head, face, or hands, while other methods of local treatment are employed for the others. Those which are most useful are citrine ointment (unguentum hydrargyri nitratis), white precipitate ointment (unguentum hydrargyri ammoniati) and ointment of the red oxide of mercury (unguentum hydrargyri oxidi rubri). These must be rubbed into the eruption, after the scales have been removed, night and morning. It is of great importance to use a very small quantity of ointment, to melt it completely before using it, and to rub it in very firmly. Great care must be taken to obtain an ointment which has been recently and properly made, and to get it in small quantities, so that it has no chance of becoming rancid by too long keeping. And one must be constantly on the watch for symptoms of salivation, especially when it is remembered that the amount which, when absorbed, is capable of producing them, varies much in different persons.

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* *Handbuch der Speciellen Pathologie und Therapie. Dritter Band.* Zweite Lieferung. Erlangen, 1862, p. 300.

Amongst other remedies, *turpentine* and *oleum pini sylvestris* (pure or diluted with olive oil), *thymol* (from gr. xv to ʒiij to the oz., as a lotion or ointment—Radcliffe Crocker), *B. naphthol* (naphthol xv pts., prepared chalk 10, lard 100, soft soap 50; introduced by Kaposi), and *resorcin* (from 1 to 6 scruples to the ℥i) are worthy of a trial when other measures fail.

For limited eruptions, Hebra recommended the use of Vleminckz' solution of sulphuret of calcium.* It should be rubbed into each patch firmly with a piece of flannel till slight bleeding is induced, when a little more of the lotion is laid on, and is allowed to dry. The patient then sits in a warm bath for about an hour. The parts are then washed and dried, and a little oil is applied. One good rubbing generally destroys a patch of psoriasis, but the treatment is very painful.

When the eruption is very limited it may be removed by blistering. For this purpose collodium vesicans (Neligan), or Smith's "emplastrum cantharidinis liquidum," or glacial acetum cantharidis—that is, acetum cantharidis prepared with glacial acetic acid, the ordinary solution of the pharmacopœia being too weak—may be used. The last should be made in small quantities at a time, and kept in a stoppered bottle, the stopper being removed for as short a time as possible, and, when not in use, covered with leather, for otherwise its strength soon diminishes. A little of this solution should be taken up by means of a paint-brush, and painted over the part till it becomes perfectly white. If the fluid is of full strength, and the skin thin, as on the face, it usually blisters it at once; but, if the opposite holds, and especially if the head or palms of the hands are to be blistered, it may require to be painted over them for several minutes. When the skin is *thoroughly whitened*, enough has been applied; but it must be remembered that the skin never "rises" after it, as after the application of a common blister. One application is often sufficient to remove the patch.

The eruption on the hands or other parts may often be benefited by what may be termed "localised cold packing." This is done by wringing a handkerchief out of cold water, and rolling it firmly round the part, and then covering it completely with oilskin. This is done every night, and the application is allowed to remain on till morning. In a short time the eruption is modified, and in some cases it disappears altogether; but, if not, it is then of advantage to make use of one or other of the ointments above referred to.

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* Calcis vivæ, ...	℔i.
Sulphuris, ...	℔ij.
Aquæ, ...	Oij.

Coque ad remanentiam librarum duodecim, et cola.

In obstinate cases an underdress of *vulcanised india-rubber* may be used continuously, but removed night and morning, in order to cleanse it as well as the skin; or it may be employed for twelve hours out of the twenty-four, one of the other methods of treatment being used during the intervening twelve hours. Under this treatment it is sometimes wonderful how rapidly improvement takes place, especially if the skin, on removing the dress, is found to be wet and macerated. For further particulars the reader is referred to the remarks already made with regard to impermeable dressings in the treatment of eczema (p. 182).

If the eruption does not yield to medicine at home, a course of mineral baths is to be recommended, especially if the disease is of old standing, and the patient in need of change of air and relaxation from business. Those of which I have had most experience are Harrogate, Aix-la-Chapelle, Kreuznach, and Leuk. Of these the baths of Leuk are probably the most effectual. It is generally of advantage to go for two or three summers in succession to one or other of these places, remaining for about a month each time; and frequently the benefit derived is not experienced till some time after the course has been taken. It is a common opinion that the advantage derived is due, not so much to the ingredients in the baths, as to the maceration which the skin undergoes, owing to the prolonged immersion in hot water, an opinion which is probably correct. Having visited Leuk a few summers ago, I can bear testimony to the accuracy of the following interesting description:*—

"The chief spring of St. Lawrence bursts forth out of the ground between the inn and the bath-house—a rivulet in volume at its source, with a temperature of 124° Fahr. It is used for the baths after being slightly cooled. The other springs vary somewhat in temperature, but little in contents. They contain only a small portion of saline matter, and seem to owe their beneficial effects less to their mineral qualities than to their temperature and the mode of using them. The patient begins with a bath of an hour's duration, but goes on increasing it daily, until at length he remains in the water eight hours a day—four before breakfast, and four after dinner. The usual *cure time* (kur) is about three weeks. The want of the accommodation of private baths, and the necessity of preventing the ennui of such an amphibious existence, if passed in solitude, has led to the practice of bathing in common. The principal bath-house is a large shed divided into four compartments or baths, each about 20 feet square, and capable of holding fifteen or twenty persons. To each of these baths there are two entrances, communicating with dressing-rooms, one for the ladies, the other for the gentlemen. Along the partitions dividing the baths runs a slight gallery, into which any one is admitted, either to look on or converse with the bathers below. The stranger will be amazed, on entering, to perceive a group of twelve or fifteen heads emerging from the water, on the surface of which float wooden tables holding coffee-cups, newspapers, snuff-boxes, books, and other aids, to enable the bathers to pass away their allotted hours with as small a trial to their patience as possible. The patients, a motley company, of all ages, both sexes, and various ranks, delicate young ladies, burly friars, invalid officers, and ancient dames, are ranged around the sides on benches, below the water, all clad in long woollen mantles, with a tippet over their shoulders. It is not a little amusing to a bystander to see people sipping their breakfasts, or reading the newspapers, up to their chins in water—in one corner a party at chess, in another an apparently interesting *tete-à-tete* is going on; while a solitary sitter may be seen reviving in the hot water a nosegay of withered flowers.

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* *Murray's Handbook for Switzerland, Savoy, and Piedmont,* 8th edition, p. 118.

"Four hours of subaqueous penance are, by the doctor's decree, succeeded by one hour in bed; and many a fair nymph in extreme *négligé*, with stockingless feet and uncoifed hair, may be enountered crossing the open space between the bath and the hotels. From their condition, one might suppose they had been driven out of doors by an alarm of fire, or some such threatening calamity. The higher patients go away in September; and late in the autumn, when only the poorer patients remain, the sight of the bath is rather disgusting."

Patients who have suffered from psoriasis for a lengthened period of time, who have consulted many physicians, and tried many remedies, become very knowing and opinionative, ask what is to be prescribed for them, and, if they are told, they say probably that they have tried it before, and it was of no use. They will not do anything, in fact, which they don't quite approve of. It is necessary in these cases to be very decided, as they are thus much more likely to have a higher opinion of their medical adviser, and to carry out more thoroughly the course which is indicated.

ULCERS.

By Dr. William Macewen and the Author.

Within the last twenty or thirty years a much more restricted meaning has been given to the term ulceration of the skin than formerly, when it included diseases such as eczema, herpes, and scabies, affections which may no doubt be complicated with ulceration, but which have no necessary connection with it.

The **causes** of ulceration of the skin are either constitutional or local—generally both. Among the former may be classed defective innervation, a lowered tone of the system, old age, scurvy, the cancerous diathesis, and the strumous and syphilitic taints. The last three, as we shall see, often impart special characters to the ulceration, by means of which we are able to recognise their parentage, and to inaugurate the appropriate treatment.

The latter (local causes) are much more numerous, so much so that it would be tedious, if not impossible, to enumerate them all; but among the more common may be mentioned inflammation, no matter how it is induced, whether resulting from mechanical or chemical irritation, infiltration of the skin with new growths, and feebleness or stagnation of the circulation of the part, such as we often observe on the lower extremities when they are the seat of varicose veins, to which these parts are specially liable. This is due to the great length of the veins of the lower limbs, to the large columns of blood which their valves have to support, and to the fact that they are outside of the fascia, so as to be less under the influence of the muscular contractions. The over-distension of the veins induces serous and cellular infiltration of the skin; this, in its turn, by irritating the cutaneous nervous filaments, causes the patient to scratch the part, and this is followed by suppurative inflammation and molecular decay. Similar results are apt to ensue from the pressure of tumours within the abdomen upon the large venous trunks, and from obstruction in vessels owing to atheromatous or amyloid degeneration of their coats, or to the formation of thrombi.

Various classifications of ulcers have been made, but for all practical purposes it will be sufficient for us to classify them under two heads:—

I. According to their temporary pathological condition.
II. According to their cause (symptomatic).

I. An Ulcer is a superficial solution of continuity arising from molecular necrosis of the tissues. The process of ulceration, in a pathological aspect, is not confined to the surface, as the same phenomena are exhibited in the midst of the tissues—as, for example, in certain stages of abscess formation, when its walls are undergoing molecular disintegration, the liquefied and degenerating tissues accumulating in the interior, instead of being shed as in ulcer. So that an abscess, at certain periods of its development, may be defined as a closed ulcer. Molecular disintegration is not confined to ulceration; it is also seen in primary interstitial degeneration. Ulceration differs from gangrene or molar death, but the process of ulceration is well illustrated in the separation of a slough. The phenomena of inflammation are always present during ulceration, which constitutes the progressive period of ulcer formation. The irritation inducing the inflammatory action may be either physical or chemical, and the result of this irritation is dilatation of the vessels, and increased serous and plastic exudation, by means of which the tissues become swollen, red, and œdematous. Some of the serous exudation escapes from between the cells of the softened epidermis, as in eczema; or the exudation may occur more rapidly, and so the horny layer may be raised as in a blister. Owing to the irritation, the cells of the rete are stimulated to greater formative activity, so that large numbers of embryonic corpuscles are found, which, instead of becoming matured, mingle with the discharge, and are shed. The tips of the papillæ are soon exposed, and are converted into a mass of granulation tissue, from which pus is secreted. At this period the discharge consists of pus, along with minute portions of tissue, thrown off as sloughs from the molecular disintegration, and also of decolorised blood-clot from the vessels. Capillary thrombosis precedes the loss of vitality and disintegration—hence there is seldom bleeding. With the removal of the irritation, the inflammatory action ceases, and the ulceration is arrested. The ulcer then begins to heal; the granulations take on a healthy action, the blood-vessels contract, the exudation becomes less, and, as the granulation tissue reaches the level of the skin, the epidermis soon begins to cover it. The leucocytes of the plastic exudation have elongated meantime, and have become converted into connective tissue, which by-and-by contracts, obliterating the blood-vessels, and materially lessening the size of the ulcer. This process is termed cicatrisation. Though greatly facilitating the healing of the sore, this process, if the ulcer be large, is at the same time apt to cause such an amount of contraction as to produce deformity or loss of function, such as ectropium or fixity of a joint.

An ulcer is always followed by a cicatrix, because the special structures of the skin are incapable of repair, being replaced by a new formation of connective tissue; but the converse does not hold, for a cicatrix does not of necessity imply preceding ulceration.

There are two distinct processes included under the term ulcer; those of destruction and repair. A pause exists between the ending of the destructive and the onset of the reparative period, and to this pause the term stationary period is applied. Therefore, from the time an ulcer commences until it is finally healed, three stages are recognised —spreading, stationary, and healing.

The spreading stage is that of ulceration or molecular destruction. In it the margin of the sore is more or less red and swollen, according to the degree of irritation. The base is not covered with granulations, because the inflammatory neoplasia is destroyed too quickly. It has a yellowish-grey colour, and is covered with pus and molecular *débris* and greyish portions of decolorised clot. When the ulceration spreads more quickly in the subcutaneous tissue than in the skin, the latter becomes undermined; and, when the soft tissues have been destroyed, leaving the more resisting structures, the vessels, nerves, and tendons become exposed. The progress of a soft chancre illustrates this spreading stage. This corresponds with the inflamed ulcer.

The stationary period is of very variable duration, sometimes so short as to be scarcely recognisable; at others existing for a very lengthened period. In the latter case, the margins of the sore are indurated, thick, and somewhat rounded, but are free from redness. The base is covered with granulations which are unhealthy; either very small, or pale and exuberant. The discharge may be scanty and fibrinous or thin and profuse. The most frequent causes of the prolongation of this stage of an ulcer are venous obstruction; prolonged irritation, which is not sufficiently pronounced to cause an extension of the ulcerative process; fixation of the margins of the sore; cessation of the contraction of the ulcer owing to its magnitude; and interference with contraction, owing to the more or less continuous movement of the affected part. This stationary period is most commonly met with on the leg, in connection with varicose veins, and is termed the indolent or callous ulcer.

In the healing period the granulations assume a healthy aspect and rise to the level of the skin. The epithelium at the margins then rapidly proliferates and covers the granulation tissue. While this is progressing, three zones may be recognised at the margin of the sore, first a dry red one, second a pale blue, and third the white cutis, the two first being due to the granulation tissue being seen through the various thicknesses of the epithelium. The cuticle which covers the granulations is derived solely from the pre-existing epidermis. This is the "Healthy Ulcer" of authors.

The granulation tissue in ulcers is not always healthy—it is subject to much variation, being sometimes distinctly morbid.

Occasionally a false membrane is formed over the granulation tissue, consisting of pus cells and leucocytes so firmly entangled in meshes of fibrin, that the membrane may be stripped from the surface entire. To this condition the term "croup of granulations" has been given. It is not, however, a contagious affection, and, although occurring when the patient is febrile, it may also be present when he is otherwise in good health. It is to be regarded as a purely local affection, arising either from irritation or from venous obstruction. It may be produced by repeated blistering. After removal, it is sometimes reproduced within twelve hours.

This condition must not be mistaken for a much more serious affection occasionally met with, in which a somewhat similar fibrinous membrane appears to cover the granulation tissue, but instead of being simply a false membrane, as is the case in "croup of granulations," it has an organic connection with the underlying granulation tissue, the vessels of which become thrombosed, and finally the affected portion either disappears by molecular disintegration or is thrown off along with the fibrinous deposit as a slough. It has a distinct tendency to spread, not only over the granulation tissue, but also over the previously healthy tissue surrounding the ulcer, which breaks down with great rapidity. Considerable constitutional disturbance accompanies this affection. It has been termed "diphtheria of wounds." It is an infectious disease, and is dependent on a specific poison. It is seldom or never seen under aseptic conditions.

In broken-down and cachectic subjects the "Sloughing Ulcer" is likely to be developed. It follows upon, indeed it is often said to be, an exaggeration of the "Inflamed Ulcer." The surrounding skin and the sore are dusky-red, angry-looking, hot, and painful. The surface is covered with a greyish slough, the edges are sharply cut, and the ulceration tends to spread rapidly.

When granulations are exuberant and overlap the sore, they are termed "fungous granulations." This condition is brought about by obstruction of the return flow of blood, or by irritation which induces greater formative activity than organising power. These granulations are pale, gelatinous, and flabby, and secrete a watery muco-purulent exudation, and the cells of the granulation tissue are prone to undergo fatty degeneration. These fungating granulations do not tend to heal. This is the "Weak Ulcer" of authors.

Some granulations are very prone to bleed, on account either of the turgescence of the vessels, or the weakness of the capillary walls, due in some cases to fatty degeneration. When hæmorrhage takes place into the depth of the granulation tissue, healing is delayed; but, when it takes place from the surface, and when the cause has been purely local, the bleeding may even be advantageous to healing, by removing the turgescence. It may be borne in mind that bleeding is characteristic of some special granulations, such as those which arise from scurvy and malignant disease.

Granulation tissue has no nerves, and therefore it is not sensitive; yet, there are some granulations which are spoken of as being the seat of pain, especially on being touched. They are sometimes called erethitic granulations. The pain evinced, when they are touched, is due, not to the granulations, but to the state of the nerves of the tissues underneath the ulcer, the granulations merely conveying the physical impression from without to these nerves. There are various theories to account for the peculiar sensitiveness of these nerves. It is supposed that they may be either stretched, or pressed on by the connective tissue formations, or, possibly, they may have become enlarged owing to irritation. This is the "Irritable Ulcer" of authors.

Treatment.—This will depend upon the temporary pathological condition of the sore, and upon the causes which have produced it.

In the case of the *Healthy Ulcer*, nature is at work in establishing a cure, and what we have to do is to give it fair play, and to prevent the sore from being injuriously affected by external influences. Rest of the part, though not always indispensable, is often desirable, and in addition a water dressing coupled with the support of a bandage is usually all that is required; but, if the process of cicatrisation is slow, the part may be mildly stimulated, as by adding a little liquor plumbi diacetatis dilutus (in the proportion of ʒi to ℥vi) to the water of the water dressing; and in every case the general health must be carefully attended to. Should the ulceration be very extensive, the process of skin grafting—to be described later on—may be necessary, and is a valuable and at times an indispensable aid to recovery.

In the treatment of the *Indolent Ulcer* what we have to aim at is to get rid of the induration and elevation of its edge, and at the same time to raise its base by stimulating it to a more healthy vascularisation, thus favouring the formation of healthy granulations. This can often be affected by the application of one or more fly-blisters which should not only cover the sore but also its indurated edges, a method of treatment held in high esteem by the late Professor Syme. The blistered surface should afterwards be dealt with in the same way as we would deal with any other blistered surface. Another method is to stimulate the sore by applying to it some powerful stimulant such as the nitrate of silver, then to poultice it for a day or two, and afterwards to strap it according to Baynton's method. Strips of calico about an inch and a-half broad, and a foot and a-half long, and, if the discharge is free, with holes in them to allow of its escape, are spread with soap or resin plaster, or a mixture of the two: these are applied smoothly and firmly round the limb in an oblique direction until the ulcer and the whole limb for a couple of inches above and below it are completely covered, and over this an ordinary bandage is carefully applied from the toes to the knee. The outside bandage should be reapplied daily or oftener if it becomes loose, and the straps every two or three days according to the extent and character of the discharge. When these are being renewed, if the sore seems to require further stimulation, it may be again treated with nitrate of silver, or washed with a lotion of chloride of zinc (a scruple to the ounce of water).

Billroth recommends the employment of moist warmth in the shape of poultices, or preferably by the use of the continuous water bath. By this means he finds that an artificial swelling and softening of the indurated circumference of the ulcer is produced, which is favourable to recovery. Whenever the indurated edges have disappeared and healthy granulations are springing up, the treatment then resolves itself into that of the "Healthy Ulcer" just described.

At the present day, however, the treatment most generally adopted is the application of one of Martin's* bandages made of pure vulcanised india-rubber, such as may be obtained from most instrument makers. The limb having been thoroughly cleansed, the bandage is applied in the morning before the patient rises. It should extend from the toes to the knee (when the ulcer is situated upon the leg), and should be stretched sufficiently to make it grasp the parts without producing the slightest uneasiness; but, owing to its elasticity, it need not be reversed as in the case of the ordinary bandage. It is removed at night after the patient is in bed, is soaked in water, to which a little carbolic acid may be added if there is any fœtor; then dried, and hung up on a rope over night. In the morning it is rolled up tightly again (beginning at the string end of course), and reapplied before he leaves his bed. During the night some simple dressing may be applied, principally with the view of preventing the bed-clothes from being soiled, but glycerine and unctuous applications must be thoroughly removed in the morning before the bandage is put on, as they are apt to injure it and to impair its elasticity. Occasionally the continued use of the rubber brings out a scattered pustular eruption which, however, may generally be prevented by dusting the non-ulcerated portions of the skin with iodoform; but, if not, the affected parts may be protected by means of little pieces of lint spread with diachylon or some other soothing ointment; or, if that does not succeed in arresting it, the bandage may be omitted for a day or two. This method of treatment is often equally valuable in the treatment of other forms of ulceration, particularly when they are situated upon the leg and complicated with varicose veins, and both it and Baynton's method have this advantage, that the patient is able to go about and pursue his ordinary avocations, indeed a more lasting result is generally obtained when this is done.

When there is a copious new-formation of fibrous tissue binding down the ulcer to the subjacent fascia, thus preventing it from contracting, and when simpler treatment has failed, Hardy* recommends crucial incisions extending from soft skin on one side to soft skin on the other side of the ulcer, taking care to cut through the infiltrated, and to expose the healthy tissue beneath. Owing to the elasticity of the parts which have been cut through, the edges of the incisions gape widely, and this may increase for two or three days, so that at the end of a week the ulcer may be twice its original size, but having a healthy, bright-red granulating surface which afterwards readily heals.

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* His original paper was published in the *Chicago Medical Journal* for October, 1877.

In the treatment of the *Weak Ulcer* we must pay careful attention to the general health, tonics being usually, and anti-strumous remedies often, indicated. Locally we may get rid of the exuberant granulations by means of caustic or blue-stone, or the parts may be dressed with compresses soaked in decoction of oak bark or cinchona, or in the "red-wash,"† or in a lotion of acetate of soda,‡ a carefully adjusted bandage being afterwards applied. This class of cases is usually very amenable to Martin's bandage just referred to.

In the treatment of the *Irritable Ulcer* we must endeavour to improve the general health, which is usually below par, nerve tonics, such as strychnia, phosphorus, and arsenic, being often of use, with opiates at night to relieve pain and to procure sleep. The affected parts should be kept elevated and at rest; a strong solution of nitrate of silver, or some such remedy, may be applied from time to time, the parts being dressed in the intervals with lint soaked in a watery solution of opium or some other sedative application.

The *Inflamed Ulcer* must be treated in a somewhat similar way, rest, elevation, and soothing applications being indispensable.

The *Sloughing Ulcer* requires absolute rest in bed, with generous diet, and the pretty free use of stimulants as a rule, while opiates in full doses are indicated. The part must be kept elevated, and sedative lotions may be applied, such as lint soaked in a watery solution of opium; but, if the phagedæna is spreading, the ulcer should be treated with the galvano-cautery, or with acid nitrate of mercury.

II. Of the varieties of ulcers, according to their cause, three only require special mention—viz., *the Epitheliomatous*, *the Strumous*, and *the Syphilitic.*

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* "On adherent Ulcers," by Dr. J. Hardy. *Lancet*, May 1884, p. 879. Quoted from *London Medical Record*, August 15, 1884, p. 341.

† ℞ Zinci sulphatis, ...	gr. xvi.	
Tinct. lavandulæ co.,		
Spt. rosmarini, āā, ...	ʒij.	
Aquæ destillatæ, ...	℥viij.	—*Solve.*

‡ ℞ Sodæ acetatis, ...	ʒij.
Glycerini (Price), ...	ʒvi.
Aquæ destillatæ, ...	℥v.

1. The *Epitheliomatous Ulcer.*—This form of ulceration appears usually upon the face in persons getting up in years. It is remarkable for its chronicity, and is often very limited in extent, although it sometimes implicates even the half of the face, and may penetrate very deeply. The surface is glistening, and bleeds readily, there is but a feeble attempt at granulation, and the discharge is thin and purulent. The edge, which is more or less circular, is often elevated, abrupt, and pearly-looking, and with a dilated vessel here and there coursing over it. When these characters are typically present, there need be no hesitation as to the diagnosis.

The treatment of this variety, as well as a detailed account of the condition, is fully given in the section upon epithelioma, to which, therefore, the reader is referred.

2. The *Strumous Ulcer* is likewise very chronic; but it occurs earlier in life, and in strumous subjects who often present other manifestations of that diathesis. The ulcers are very typical: they have a great tendency to throw out profuse granulations, the edges are apt to be undermined, and the surrounding skin has a violet tint. If cicatrisation has occurred at any part, little tongue-like processes of skin are frequently seen to project from the surface, and bridles of skin are apt to be left under which a probe can often be passed.

This form of ulceration demands the free and long-continued use of anti-strumous remedies, while the local treatment must vary according to the temporary pathological condition of the ulceration. But if the skin is much undermined it must be slit up, or cut away, and the profuse granulating surface may either be dressed with lint soaked in a stimulating application such as the liquor ferri perchloridi, or destroyed with caustic, or scraped away with one of Volkmann's spoons. It sometimes happens, especially when the ulcer is on an exposed surface, as on the neck, that a strumous gland in a state of suppuration forms its floor, and in that case the best treatment is to remove it entirely. (For further particulars the reader is referred to the chapter on strumous affections of the skin.)

3. The *Syphilitic Ulcer*, though chronic, is not nearly so much so as the last two varieties: it is apt to occur in the subjects of old-standing syphilitic taint, who often present other manifestations of syphilis. The ulceration is usually circular in shape, or in segments of circles, or serpiginous; the edges are apt to be perpendicular, as if the sore had been cut out with a punch; the base is usually ash-grey in tint, and the surrounding skin has a more or less brown or coppery tint. Often in the vicinity circular coppery scars are seen, or cicatrices which are smooth and white in the centre, and with narrow sharply cut edges, and a coppery areola, which are very characeristic. But it

must never be forgotten that on the legs—owing to their dependent position and frequent complication with varicose veins—the edges of non-syphilitic ulcers and scars have often a dark tint which might lead one to suppose that they had a syphilitic basis.

Constitutional treatment is here indispensable, and resolves itself into the use of the various preparations of mercury and iodine. As regards local treatment we may often succeed in healing up the ulcer by means of non-syphilitic applications selected according to the temporary pathological condition of the sore; but a more rapid cure is generally effected by the employment of anti-syphilitic remedies—*e.g.*, sponging the part with black or yellow wash, and afterwards dressing it with pieces of lint soaked in the same, or applying on lint an ointment containing some preparation of mercury.* (For further particulars the reader is referred to the chapter on syphilitic affections of the skin.)

Skin grafting.—Many large granulating surfaces, though at first healing with considerable rapidity, afterwards do so slowly, and the process may even come to a standstill owing to the resistance of the surrounding tissues to the further contraction of the granulations, and also probably on account of the attenuated condition of the epithelial cells, at the border of the sore. In such cases in time past, flaps, including the entire thickness of the cutis, were occasionally taken from another part of the body and placed on the granulating surface; but this process besides being painful, and leaving a large sore at the spot from which the flap was removed, was in so many instances attended with failure that it has seldom been resorted to. M. Reverdin, of Geneva, introduced the present method of skin grafting. In 1869 he succeeded in transplanting small portions of skin from one part of a man's body to a granulating surface situated at another, and thereby greatly hastened the healing of the sore. This method has been widely adopted, and is now regularly employed to facilitate the healing of large granulating surfaces, such as may have been left by ulcerative processes occasioned by large burns or by wounds, involving an extensive destruction of the cutis. It is also of considerable value in obviating deformities, such as ectropium, arising from contractions due to cicatrisation.

A granulation surface is covered with epithelium by segmentation or budding of the epithelial cells at the margin of the sore. These cells cannot arise from the granulation tissue, but must have origin in some pre-existing epithelium. If, then, minute portions of skin be trans-

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* ℞ Hydrargyri subchloridi, ...	ʒss.	
Glycerini (Price), ...	ʒi.	
Lanolini purissimi, ...	℥vi.	—*M.*

planted on to the granulation tissue, the proliferation of the cells of these grafts leads to the formation of cuticular islands, which go on increasing until they coalesce with one another, or with the epithelium from the margin of the sore. By doing so the healing is greatly facilitated and the process of repair is rendered much more complete and permanent. The graft ought to consist of some of the cells of the rete Malpighii; and any of the cells of the stratum granulosum, and even the deeper cells of the stratum lucidum, are sufficient for the purpose. The stratum corneum is of no value; neither does it serve any purpose, if indeed it does not hinder the process, to include the subcutaneous tissue. Practically all that is necessary is to remove a minute superficial portion of the skin. This may be done in a variety of ways. The dissecting forceps may be made to pinch up, or a needle to transfix, a small portion of the skin, which may be snipped off with scissors or removed with a scalpel. A special instrument, a combination of scissors and forceps is made by Krohne & Sesemann, after Macleod's pattern, for effecting the removal of such portions of skin, but a pair of sharp scissors curved on the flat is well adapted for raising a thin shaving of the cutis. The surface from which the skin is removed presents a reddened appearance, with occasionally a few minute points of blood. It may be covered for a few days with a small portion of protective oiled silk, or other simple dressing, or dusted with iodoform, which stops the bleeding and acts as a good dressing.

When the portion to be grafted has been elevated, it is divided into as many minute particles as practicable: pieces the size of an ordinary pin-head are suitable. This may be done by means of a sharp knife, the finger-nail being used as a table. The grafts may be placed at any part of a healing granulating surface, and may grow, forming islets of skin; but all parts of a granulating sore are not equally prepared for the reception of a cuticular covering. Thus at the centre of a healing sore the granulations are prone to be larger and the secretion more profuse than toward the margin, where they are at the proper level of the skin, and where the secretion is reduced to a minimum. Therefore, if the grafts are placed within three-quarters of an inch of the margin of the ulcer, they will find a tissue prepared for their reception. They may be placed about an inch apart from each other. Not only is this zone of tissue most suitable for the grafts, but, by their presence here, they seem to exercise a beneficial influence on the cutis at the margin of the sore itself, as, shortly after the grafts have become adherent, the marginal epithelium seems to be stimulated to more vigorous growth than formerly. The grafting may be repeated as often as required. The grafts ought to be placed in intimate contact with the granulation tissue, and retained in position by some convenient dressing. Some surgeons recommend that a wound be made in the granulation tissue, and that the graft be inserted into it. This is not advisable, but care is required to prevent the grafts from being displaced. This may happen in one of two ways—first by friction from the outside, and second by being floated from the granulations by the discharge, the means taken to obviate the former often facilitating the latter. If the sore be large and a single piece of guttapercha tissue or other waterproof material be laid over the grafts, in contact with the granulation tissue, the secretion from the whole surface accumulates under the dressing, and is apt to float the grafts before they have become sufficiently adherent. A piece of freely perforated protective plaster, laid over the grafts and covered with sublimated wood-wool, is admirably suited for the purpose. The silk protects the grafts from injury, and, as it does not adhere, there is no tendency to their displacement, while the numerous perforations in the silk permit the secretion to come into contact with the sublimated wood-wool, and, this being an excellent absorbent, the wound is kept dry, the necessity of frequent dressing is dispensed with, and the healing is facilitated. A week afterwards the wound may be dressed.

The superficial layer of the grafts sometimes separates and is seen floating in the secretion, while the deeper layer has become united to the tissue. If this be not borne in mind when the surface of the granulation tissue is being examined in order to ascertain whether the grafts have taken, it might lead one to suppose that they had failed. The mistake is all the more probable on account of the fact that the young epithelial cells are so transparent that they are barely recognisable, the granulations being seen through them, and therefore at an early stage they might be easily overlooked. The newly transplanted skin assimilates itself so thoroughly to the tissue that it soon becomes sensitive, and the cicatrix formed by its aid resists disintegrating changes much better than when unaided cicatrisation has taken place over a large surface.

Can skin be successfully grafted on unhealthy granulations? In dealing with ulcers, it is essential that all molecular disintegration should have ceased at the part on which the graft is to be placed. Occasionally skin grafts do succeed when planted on granulations, which are not quite in a state of health, and when this is accomplished they speedily effect an improvement in the condition of the granulations surrounding them. Though this be admitted, there can be no doubt that skin grafting is most easily effected and most successful when planted on a healthy granulating surface. As the condition of the ulcer depends greatly on the state of the patient, the general health ought to be closely looked to.

The parts of the body from which grafts ought to be taken are those least exposed to friction, and which are at the same time not covered by a thick cortical layer. It is best to take the graft from the body of the patient for whom it is required. By doing so, the risk of introducing deleterious or poisonous elements into the blood is avoided. A mother might prefer to have the graft removed from her own arm for the sore on her child. If a graft is to be removed from another person, sanction ought to be sought and distinctly received before doing so. Although the epithelium is being constantly renewed during the whole life of the individual, yet in old age its vitality is somewhat impaired, and it is not so suitable for grafting as that of a young person. In a hospital, skin may be taken from a newly-amputated limb—the sooner after removal the better—though the epithelium has been known to have retained its vitality for at least an hour after amputation, and to have lived on being grafted.

Dr. Hamilton, of Aberdeen, introduced the practice of what he called *sponge grafting*, with the view of hastening the healing of deep wounds. He previously prepares the sponge by steeping it in a dilute solution of nitro-muriatic acid to dissolve the silicious and calcareous salts, and, when this has been effectually accomplished, the sponge is washed in dilute ammonia or potash to remove all excess of acid. It is then placed in a 5 per cent. solution of carbolic acid to render it aseptic, and it is stored in the same until required. Dr. Hamilton recommends a thin section of sponge thus prepared to be placed over such granulation surfaces as are below the level of the skin, with the view of affording a support for the blood-vessels of the granulation tissue which will push their way into the interstices and so fill up the cavity, the sponge eventually becoming absorbed. He further recommends that, when one piece of sponge has been covered by granulations, another may be applied on the surface until the granulation tissue reaches the proper level. Dr. Hamilton has related cases in which he believes that this process hastened the healing of the sores, and a few cases have been reported by other surgeons, all of them tending to prove that the so-called sponge-grafting is a successful means of healing such sores. We have carefully experimented in this direction, and, however interesting as a physiological phenomenon the penetration of decalcified sponge by granulation tissue may be, his observations have not led us to believe that the sponge hastened the healing of the sore, while in some instances it distinctly retarded it.

II. NEW FORMATIONS AND TUMOURS.

KERATOSES.

This term was first suggested by Lebert as applicable to hypertrophic affections of the epidermis. The diseases included in this group have been subdivided by Hebra into two classes—viz., (1) Keratoses without disease of the papillæ; and (2) Keratoses with disease of the papillæ. The first class comprises four affections—Clavus, Callositas, Cornu, and Lichen pilaris; the second, two—viz., Verruca and Ichthyosis.

I.—KERATOSES WITHOUT DISEASE OF THE PAPILLÆ.

1. CLAVUS—CORN.

This condition, which is too well-known, is generally met with upon the feet, although it may occur upon the hands—upon any part, indeed, which is subjected to frequently recurring pressure or friction—and the reason why the feet are so commonly attacked is that they are apt to suffer from the use of tight, or badly fitting boots.

If we examine a corn carefully, we see that it is a more or less conical hypertrophy of the epidermis—usually of a horny consistence (hard corn)—and if we pare it we find that it has a kernel or "root," which is prolonged in the form of an inverted cone, the apex of which rests upon and compresses, and often atrophies, the papillary layer of the corium. The mode of formation of the core is thus described by Wilson:*—"The pressure of the thickened mass of cuticle on the tender and inflamed corium produces a depression; the continuance of the pressure gives rise to absorption of the corium, and very soon the plane surface of the corium is converted into a cup or crater. The thickened mass of cuticle is pressed into this cup, and is pointed or blunt in proportion to the breadth and depth of the cup, reminding us of a nail (clavus) inserted into the skin; hence the scientific designation of the disease.

The new position of the formative organ of the epidermis, namely, the corium, occasions an alteration of the strata of the epidermis. The strata formed within the cup assume naturally the cup shape, and as they rise to the surface present the broken edges of a cup, with a small central mass or nucleus (the lye of the corn), suggesting the idea of vertical fibres rising to the surface, and the ruggedness is increased by the broken edge of the epidermis that corresponds with the border of the cup. The fibrous appearance of the centre of the clavus has suggested the idea of roots; and the central cup-formed mass of hard and condensed cuticle has been regarded as the core of the corn." When paring a corn we sometimes find the remains of a minute hæmorrhage, and hence some hold that the corn is the consequence of a prior extravasation of blood. The hæmorrhage, however, is not the cause of the corn, but the consequence of its pressure upon the papillæ of the skin leading to rupture of capillary vessels. Another result of the pressure of the core of the corn on the sensitive structures beneath is the production of pain when it is pressed upon, and the occasional occurrence of inflammation with the formation of pus which separates the corn from its bed, and removes it by an effort of nature, as it were. When the corn is situated over a bursa, the latter is apt to inflame, giving rise to a *Bunion;* and, when over a joint, the fibrous tissues sometimes inflame, leading to an enlargement of the heads of bones connected with it.

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* *On Diseases of the Skin*, by Erasmus Wilson, F.R.S. Ed. vi., p. 374. London: John Churchill & Sons, 1867.

The pain associated with the presence of a corn is due to the presence of the thick, horny epidermis upon the deeper, sensitive structures, and is chiefly complained of when the part is pressed upon, as by a tight boot, but apart from this it may result from atmospheric vicissitudes, so that sufferers can often foretell the advent of wet weather without consulting the barometer.

When the corn is situated upon the sole of the foot, the condition known as "Perforating ulcer of the foot" * sometimes ensues. The clinical history of this complication is thus described by Mr. Frederick Treves.† "At a spot upon the sole of the foot upon which pressure bears a corn appears. This spot is very commonly over the metatarso-phalangeal joint of the great toe, or over the corresponding joint of the little, or on the pulp of the great toe. The corn increases, and, from the pressure that it exercises upon the soft parts beneath it, some inflammation of an insidious type follows. Suppuration then appears beneath the corn, and, spreading in the direction of the least resistance, advances into the soft parts of the sole, moving towards the bone. It may be that the column of soft parts compressed between the corn and the bone beneath which it lies may perish almost *en masse,* as would appear to be the case with the tissues in the acute bedsore of spinal origin. Be this as it may, this at least is evident, that when at last the pus finds an escape through the thickened skin about the corn, a sinus is revealed that will be found to extend already to the bone. The patient continues to walk upon the foot, and around the orifice of the sinus or the margins of the ulcer the epithelium continues to heap itself up. This thickening of the skin is always considerable. The sore appears to be set upon a mound of hardened, thickened integument; and it thus happens that the depth of the ulcer or the length of the sinus is greatly increased. Bone may be lying at the bottom of the sinus."

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* The name given to it by Vesigné.

† The *Lancet,* Nov. 29, 1884, p. 950.

The perforating ulcer of the foot is generally solitary, but a good many cases have been recorded in which it was multiple, and it is undoubtedly occasionally hereditary. And, while a corn is, in many cases, the exciting cause, the tendency to perspiration, the defective sensation, and the lowering of the temperature of the affected limb, which so generally accompany it, point to a central or peripheral nerve lesion as the predisposing cause. This view is supported by the fact that similar ulcers are not uncommonly met with in anæsthetic leprosy, in locomotor ataxy, and in paralysed limbs. The anatomical lesions further corroborate the neurotic origin of the complaint. For, while the motor nerves distributed to the affected foot are usually intact, the sensory nerve fibres are diseased. It has been remarked by Messrs. Savory and Butlin,* that the sensory and nutrient fibrils of the supplying nerves are degenerated as the result of pressure exercised upon them by increase of the endoneurium, while the motor fibrils escape, owing to their larger size and thicker medullary sheath. Some authors are of opinion that there is a causal relation between the perforating ulcer and arterial disease; but, while, in some cases, the coats of the vessels are in a state of calcareous or other degeneration, in others they have been found to be perfectly healthy.

Perforating ulcer may be mistaken for tubercular disease of the foot. But, in the former, as has been pointed out by Mr. Hancock,† the disease is often hereditary; is unaccompanied by evidence of tubercle; commences usually in a corn under the metatarso-phalangeal joint; and is usually confined to the anterior part of the foot; the swelling is moderate; and the affected limb has its temperature and sensibility lowered, while there is a tendency to profuse perspiration.

When corns occur upon parts which are in contact and moist, as between the toes, they are soft and flat, and, being macerated, have a white and sodden appearance (soft corns). If inflammation of the tender cutis occurs, the exudation which accumulates beneath may perforate the centre of the corn, and, if the latter be removed, a raw abraded surface is exposed to view, and even ulceration and caries of bone may ensue.

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* *Medico-Chirurgical Transactions.* 2nd series. Vol. xliv., p. 373, *et seq.* Longmans, Green, Reader & Dyer, 1879.

† *The Operative Surgery of the Foot and Ankle-Joint.* London: J. & A. Churchill, 1873. p. 75.

Corns, which may be single or multiple, do not attack all persons whose feet are exposed to pressure or friction, some people and some families being specially liable to them in virtue of some peculiarity in the constitution of an altogether indeterminate character. We can only register the fact without being able to afford any satisfactory explanation of it.

There can be no difficulty in making a diagnosis *if the part be carefully examined*, but that mistakes may occur the following illustration will show :—"The patient," wrote Hebra, "was a tall, stout vigorous man, whose occupation as a soap-boiler necessitated his standing on his feet all day long. Suddenly the man was seized with very severe pains in his feet. He could only manage to walk in shoes with felt soles by exercising great resolution, and was consequently much hindered in following his employment. As, however, he also experienced severe darting pains in his feet at night, was well nourished and given to the pleasures of the table, the physician whom he consulted declared the malady to be arthritic, gave him appropriate internal remedies and ordered baths, both without result. The patient was then directed to try the waters of Karlsbad. The 'mineral waters' gave no relief; after the use of hot spring baths the condition appeared to improve. The patient still had pain in walking, but was comfortable when the feet were in a horizontal position. On his return from Karlsbad the old malady reappeared as soon as he attempted to resume his work. After he had again tried the various anti-arthritic remedies, colchicum, spirit. mindereri, &c., and general and local baths, and had passed a second season at Karlsbad—that is, at the end of two years—I was consulted. In accordance with my principle of always closely examining the diseased parts themselves, which had hitherto been omitted by the practitioner, I looked at once, in this case, at the diseased feet, and discovered then the cause of the severe and long-continued pains. On the sole of the foot were a large number of callosities, closely aggregated together, of the size of millet seeds, or of lentils, partly convex, partly concave from mutual flattening, and which had given rise to the severe pains from pressure. Instead of the previous diagnosis of arthritis, I substituted that of clavus, which was also confirmed by the more careful examination of some of the callous formations. It was also shown, by the result of the treatment employed, that we had not to do with gout, but only with corns. For, the immediate application of softening remedies, the removal of the individual clavi, and the application of an emollient plaster for some time, sufficed to relieve the long afflicted patient from his pain, and to enable him to resume his employment."[*]

Treatment.—The usual treatment for this condition is to pare away the corn with a sharp knife, taking care to dig out the core, the remains of which—as Wilson recommended—may be rendered more apparent by rubbing the parts with eau-de-Cologne or spirits-of-wine —or the part may be first softened by sponging it thoroughly with hot water or by the application of small poultices, or of a folded piece of wet lint covered with oilskin, after which it may be scraped away. Another way of dealing with a corn is to cover it with a piece of Unna's "emplastrum salicylici," which may be kept in position with a strip of bandage. In a few days it is removed, and with it the corn comes away too, or it is easily scraped away; but if not a fresh piece of plaster should be applied. As for plasters advertised as specifics for corns, their name is legion. I shall only, however, refer to one which sufferers speak highly of—viz., Beetham's plaster (Chemist, Cheltenham). The corn is covered with a piece of the plaster kept in position with a somewhat larger piece of gum-paper. This is renewed every three or four days, and after the removal of the third, the foot is soaked in hot water, after which the corn can generally be easily removed. To prevent its recurrence this treatment should be continued for some time. In every case it is desirable to get rid of the pressure or friction of badly fitting boots, &c., and, after the corn has been removed, a small piece of emplastrum hydrargyri or emplastrum diachyli may be applied for a time, or a corn plaster may be used, the orifice in the centre corresponding with the seat of the previous corn. In the case of the soft corn, such as we meet with between the toes, the best way of preventing the pressure of opposed surfaces, is to insert a small piece of Lawton's absorbent cotton between them, either in front of or behind the seat of the corn. I am not aware of any means of preventing the recurrence of this disorder, unless it may be by the administration of a course of arsenic.

Mr. Treves recommends the following treatment for "perforating ulcer of the foot" above described:[†]—

"The patient is confined to bed and the sole of the foot is kept continuously poulticed with linseed meal. This causes the epithelium to soften and swell up, so that at the end of twenty-four hours the ring around the sore appears as a very prominent softish white mound. All this redundant epidermis is then shaved away with a scalpel, and the poultice is reapplied. At the end of another twenty-four hours the deeper layers of epithelium that were not affected by the first poulticing have become swollen and prominent. They are in turn cut away. The poultice is again applied and the scalpel used day by day, until the whole of the epidermic mass has been removed. This object will be effected at the end of about ten or fourteen days. By this time the skin about the ulcer will, as a result of the continued poulticing, have peeled off in a thick white layer, and around the sore will be nothing but thin fresh pink epidermis, looking active and healthy. The ulcer in the meantime will be found to have cleaned, and by the loss of its cutaneous boundary will appear less deep. The poultices are now discontinued, and to the sore is applied a paste, of the consistence of thick cream, composed of salicylic acid and glycerine, to which is added some carbolic acid in the proportion of 10 minims to the ounce. This ulcer soon heals, and when the patient gets up he is instructed to wear a thick pad of felt plaster over the spot, with a hole in its centre that corresponds to the scar of the recent sore. This plaster should be always worn."

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[*] "On Diseases of the Skin," by F. Hebra, M.D., and M. Kaposi, M.D. Vol. iii. *New Syd. Soc. translation.* London, 1874. p. 37.

[†] The *Lancet,* Nov. 29, 1884. p. 950.

Unfortunately, this treatment is often unsuccessful, and necessarily so if the bone is diseased. In that case the carious bone must be removed, or the toe or foot amputated; but even then the disease is apt to return in neighbouring parts. As a last resort, Messrs. Savory and Butlin recommend the use of an artificial leg attached to the bent knee, so that the foot may be carried without having to take any part in supporting the weight of the body.*

2. CALLOSITAS.

Syn.—*Tyloma—Tylosis—Keratoma—Callosity.*

This condition is closely allied to the corn, in as much as it consists of a hypertrophy of the epidermis, and is dependent upon the same kind of causes, although occasionally none can be made out. The only point in which it differs from a corn is in the absence of the root or core, there being simply an accumulation of many layers of epidermis. It depends upon the situation of the epidermic hypertrophy whether a corn or a callosity makes its appearance. If it is situated upon an unyielding part, the pressure is concentrated and a corn appears; if upon a yielding part, a callosity results (Rindfleisch). It consists then of a thick, dense, firm, circumscribed, epidermic structure of a yellowish or brownish colour, and often of almost horny consistence. It is oftenest round, but varies in shape, as well as in size, according to its site and cause. It is oftenest seen on the feet and hands. In the former situation its commonest seat is the sole, especially the heel and ball of the great toe, as the result of badly fitting boots or excessive walking; in the latter, the palms, especially over the heads of the metacarpal bones, and the fingers are usually attacked. It is common amongst the working classes as the result of the pressure of their tools, &c., and I well remember the pleasure which Hebra took in diagnosing the occupation of his patients from the seat of these callosities. In his work on *Diseases of the Skin* he thus refers to this point. "Callosities are constantly found in those who work at fires—locksmiths and blacksmiths—on the tips of the fingers, arising from their frequently touching hot bodies. Large callosities are often found among such in the palm of the hand, reaching from the wrist to the part over the heads of the metacarpal bones, owing to the use of files. On the tips of the fingers of the left hand of musicians who play on stringed instruments, we notice small shield-like callosities from the pressure of the strings; such callosities are found in players of the guitar and in harpists. A pitted callosity is found in industrious tailors on the tip of the left forefinger, which is held against the needle, and a flat callosity in the palm of the right hand from handling the smoothing-iron. Shoemakers often possess such thick callosities on the inner surfaces of both hands, that complete extension of the latter becomes impossible. The furrowed callosities which become developed on the flexor surfaces of their fingers, from the repeated friction of the string (the so-called "wax-end"), are also considered characteristic. Lacemakers and other loom-workers have rounded callous thickenings of the epidermis as large as a silbergroschen (smaller than a sixpence) upon the extensor surfaces of the second phalanges of the four fingers (not of the thumb) on each hand, resulting from the fingers being frequently struck on the loom. The use of the plane and the saw by joiners is indicated by a callosity which is developed on the fold between the forefinger and thumb of the right hand, and sometimes on the dorsum of the first phalanx of the same forefinger, &c., &c." *

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* *Op. cit.*, p. 385.

The production of callosities must be regarded for the most part as efforts of nature to protect the tender parts beneath, although it must be admitted that occasionally they induce inflammation and suppuration of the corium. This happens, however, much more rarely than in the case of the corn, whose "core" is very apt by its concentrated pressure to light up inflammatory action. For the same reason, too, callosities are much less frequently associated with pain and tenderness.

In rare cases the palms or soles, or both, are universally involved, the thickened epidermis having a yellowish, translucent appearance, and being very hard and dry. The surface is generally smooth, but it may be worm-eaten, or nodulated usually as the result of long courses of arsenic. Such diffused callosities are often congenital.

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* *Loc. cit.*, p. 34.

I need not dwell upon the treatment of this condition, seeing that it must be conducted on the same principles as in the case of the corn. But amongst other remedies salicylic acid in plaster or ointment (ʒi to ʒij to the ℥i) is specially to be recommended; and Jamieson favours the application of a paste made by mixing emol * with a sufficiency of water. He applies it thickly, and prevents evaporation by covering it with gutta-percha tissue or the like. In addition to local treatment, of course the cause or causes must, if possible, be ascertained and removed.

3. CORNUA CUTANEA—HORNS.

While horns occur normally on the heads of many of the lower animals, they are rarely met with in man, and, although we know very little with regard to the causes which induce them, it is probable that, in many cases at least, local irritation has something to do with their production. They are most commonly met with on the head and face, although any part may be implicated, as shown by the following tables:—

Seat of the Horns.			No. of Cases.
Head,	Scalp,	25	40
	Forehead,	11	
	Temples,	4	
Face,			19
Extremities,	Upper,	8	19
	Lower,	11	
Trunk,			7
Genitals,	Glans,	6	8
	Scrotum,	2	
Uncertain,			4
		(*Lebert.*)	97

Head,		48
Face,		8
Lower extremities,		14
Trunk,		15
Glans penis,		5
	(*Wilson.*)	90

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* Emol is prepared from a material allied to fuller's earth which is found at Lord Rollo's property near Dunning, a specimen of which he was kind enough to send to me.

They are more commonly met with in females than in males, Wilson's statistics showing 44 cases in females to 39 in males, and those of a Committee of the Royal Academy of Medicine of France, 37 in females to 31 in males. They are usually seen in persons who have passed middle life, although they occasionally attack infants and young persons. Usually they are solitary, but occasionally they are multiple. Amongst the cases collected by Lebert, 109 in all, in 12 the growths were multiple. Bötge has reported the case "of a girl aged 19, who in her second year had an extensive eruption, which was followed by wart-like growths. The lower portion of the body, from the crest of the ilium down, was studded with a great number of disseminated and grouped horns of various sizes. The gluteal regions were thickly and symmetrically set with them. Close to the navel there was a horn about 6 inches in height, while on the right labium there was one but a trifle shorter."*

Horns spring from the mucous layer of the epidermis, or from its extension into the cutaneous follicles. They are composed entirely of epidermic cells, and, as Lebert has pointed out, a longitudinal section of a horn shows that "the mass consists of small columns, rods, or palisades, lying close to one another, and so intimately united by a connecting substance as to appear blended into a homogeneous mass. The individual columns have a striped, shreddy appearance, and are made up entirely of epidermic cells arranged upon one another in an imbricated manner."† Transverse sections show rounded spaces concentrically laminated, and surrounded by epidermic cells lying irregularly between them, constituting the connecting substance above referred to. At the base of the horn blood-vessels are frequently to be detected, while around the base the skin is occasionally swelled and hypertrophied, although it generally has a normal appearance. Horns composed of sebaceous matter are referred to in the article on sebaceous cyst (see p. 75).

Horns are usually greyish, yellowish, or brownish in colour, and present a rough, wrinkled, and laminated surface. They are usually elongated and conical, being broader at the base than at the apex, which is generally blunt, but sometimes they are flattened, and not much elevated above the surrounding surface. They grow slowly, years often elapsing before they attain their full size, and sometimes their proportions are excessive. The most remarkable case on record is that of a Mexican porter named Paul Rodriguez. "The horn was situated upon the upper and lateral part of the head, was 14 inches in circumference around its shaft, and divided above that point into three branches."* The horns are themselves quite insensitive, but, by pressure on the tender cutis, they may give rise to pain, especially if pressed upon or knocked, and sometimes the skin at their bases inflames and suppurates, and they fall off. But after they have been shed, either with or without preceding inflammation, they are apt to recur, and cases have been recorded in which this has occurred many times. In a considerable proportion of cases (12 per cent. according to Lebert) they prove the starting point of epithelioma.

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* Quoted from *A Practical Treatise on Diseases of the Skin*, by Louis A Duhring, M.D. Ed. ii., p. 355, 1881. Lippincott & Co., Philadelphia.

† *Op. cit.*, p. 356.

Treatment.—This consists in tearing out the horn, after softening it with poultices, but in order to prevent its return, it is desirable to cut out the piece of cutis from which it grows, or to cauterise the base freely with chloride of zinc or caustic potash.

4. LICHEN PILARIS.

Syn.—*Pityriasis Pilaris—Keratosis Pilaris—Hair Lichen.*

Lichen pilaris—as we understand the term nowadays—is not, in the first instance at all events, an inflammatory affection, but one due to an abnormal accumulation of epidermic cells, mingled with sebaceous matter, at the orifices of the hair follicles. The condition is due to the retention, at the orifices of the follicles, of the root sheaths, which in a state of health are imperceptibly cast off. In this way epidermic papules are developed, the centre of each of which is perforated by a hair, unless the hair is cabined and confined by the pent-up epidermis, in which case it will be found coiled up in the centre of the mass. These papules, which are discrete, and about the size of pins'-heads or rather larger, are more or less conical in shape. Sometimes they are irritable, and the scratching which is then indulged in is probably partly the cause of the congestion and inflammation which may sometimes be seen around them, as well as of the fact that some of the hairs penetrating them are broken off on a level with the surface. (The term *lichen pilaris* is sometimes restricted to that variety of the affection which is associated with inflammation, while *keratosis pilaris* is given to it when there are no inflammatory accompaniments.) While other parts may be involved, the localities generally preferred by the eruption are the extensor surfaces of the thighs and arms. The skin between the papules is generally dry, harsh, and scaly. This complaint is only a source of annoyance when it is itchy, or when it attacks the arms of young ladies, as it causes some disfigurement;

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* Quoted from the work of Erasmus Wilson, F.R.S., *On Diseases of the Skin*, Ed. vi., p. 800, 1867. John Churchill & Sons, London.

and, although its causes are somewhat obscure, there is reason to believe that it occurs most commonly in those, the texture of whose skin is naturally coarse, and in those who do not wash the parts thoroughly.

Diagnosis.—The disease most liable to be mistaken for lichen pilaris is a *syphilitic papular eruption* (Lichen syphiliticus). But in it the papules have a dusky or coppery tint, have a tendency to occur in groups or in circles or segments of circles, are never itchy, and desquamation is apt to occur around their edges in the shape of collars. There is also usually a history of recent infection, and other manifestations of syphilis are almost invariably to be found.

Under the influence of cold, nervous excitement, &c., a contraction of the *arrectores pilorum* is apt to take place, in consequence of which the orifices of the hair follicles project beyond the level of the surface in the form of papules—constituting the condition termed *Cutis anserina* or goose-skin (so-called from the resemblance of the skin to that of a plucked goose). This appearance should not, however, be mistaken for lichen pilaris, if we bear in mind that it is an acute and transient, though oft recurring, phenomenon, one which is not localised, but affects the whole, or the greater part, of the cutaneous surface, and which is frequently accompanied by "shivery" feelings, and with a sensation as of cold water trickling down the back.

Treatment.—This consists in the frequent use of warm vapour, and above all Turkish baths, with free ablutions with soap, or with the tincture of soft soap, or, above all, with superfatted marmor or sulphur soap. This may be followed with advantage by the thorough application of Price's glycerine and rose water in the proportion of 1 to 4 before drying the part with a rough towel. Should there be a congestive or inflammatory element in the case, tarry preparations may be used, such as a lotion composed of 1 part of liquor carbonis detergens to 5 of distilled water, or of equal parts of oil of cade, soft soap, and rectified spirits of wine. In obstinate cases arsenic may also be tried.

II.—KERATOSES WITH DISEASE OF THE PAPILLÆ.

1. VERRUCÆ—WARTS.

Warts are so commonly met with upon the hands and upon other exposed parts of the body that every one is more or less familiar with their appearance, and has generally little difficulty in recognising them. They are most commonly met with in young persons, if we except the flat variety soon to be described (Verruca plana), which has a preference for those who are getting up in years. They are more frequently met with in some families than others, and are not to be regarded in the light of mere local affections; indeed, I have little doubt that they are remotely connected with the scrofulous diathesis—that they are what we may call, in imitation of the nomenclature of our friends across the channel, a "benign scrofulide." In corroboration of this view we may recall the fact that affections undoubtedly strumous have a special proclivity to take on a warty appearance, which is well illustrated by that form of disease which I described many years ago under the name of lupus verrucosus (see Strumous Affections). That local irritation is very likely to induce them is undoubted, although we are not always able to trace it, but it is very apparent in that variety which is specially apt to attack the genital organs, &c., as the result of irritating secretions (see Verruca acuminata). It is also illustrated by the occurrence of the so-called "Verruca necrogenica," which is frequently met with on the hands of those who are in the habit of making *post-mortem* examinations, as the result of the contact of the irritating secretions from dead bodies, although this affection is not an ordinary wart in my opinion, but is often at least a manifestation of the scrofulous diathesis. That there is anything contagious in warts few nowadays will be prepared to admit, although it used to be held that blood coming from them is apt to produce fresh crops upon those parts of the surrounding skin with which it comes in contact.

Warts are most frequently met with on the hands, head, face, genital organs, and feet, although no part of the surface is altogether exempt from them. Often they are solitary, but more frequently multiple, and even hundreds may be found upon the skin at one time: they may be discrete or confluent. In size they do not exceed the area of a sixpence, and often they are much smaller, but when they are confluent they may occupy a much more considerable surface. The generally received opinion, that the primary deviation from the normal is a hypertrophy of the papillary layer of the corium, is not borne out by the most recent investigations, which tend to show that the main seat of the change is in the epidermis, all three layers of which are hypertrophied. It is the penetration of the prickle layer into the cutis which produces the elongation of the papillæ, and the heightened nutrition of the tissues of the cutis is the consequence of the secondary dilatation of the blood-vessels.*

Of the varieties of warts, six are deserving of special mention, viz.:—

Verruca vulgaris.
Verruca plana.
Verruca filiformis.
Verruca digitata.
Verruca acuminata.
Verruca seborrhœica.

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* See Article by Dr. Geo. Kühnemann, translated by H. Leslie Roberts, M.B. *Brit. Journ. of Derm.*, Sept., 1889, p. 366.

(*a.*) *Verruca vulgaris,* as its name implies, is the form commonly met with, and usually upon the hands. It is a firm, circumscribed, rounded growth, averaging in size that of a large pea. Its surface is generally horny, and is smooth, or more frequently rough, owing to the deep penetration of the prickle layer into the cutis: it may have the same colour as the surrounding skin, but it is generally darker, and may even be almost black.

Those which are smooth upon the surface, of small size, and of the same colour as the surrounding skin, may be mistaken for molluscum contagiosum, but the latter is generally met with on the eyelids, face, or breast, the little growths are less firm and dense, and near the centre a depression is usually seen, with an orifice through which white, cheesy, sebaceous matter can be expressed.

(*b.*) *Verruca plana.*—This form is often met with in people getting up in years—hence it is sometimes termed verruca senilis—and is usually seated on the face, nape, or back. As its name implies, it is not much elevated, but, on the other hand, it occupies as a rule a larger area than the common wart. It has a dark colour, and is more serious than other forms, in so far as it is occasionally the starting point of an epithelioma.

(*c.*) *Verruca filiformis* is the result of hypertrophy of a single or of several papillæ, which are of great length, and assumes the shape of a conical, thread-like process about a sixth of an inch in length. It is oftenest met with on the eyelids, face, and neck, and is either solitary or occurs in groups: a patch of them has been likened by Rayer to coarse plush.

(*d.*) *Verruca digitata* is generally observed upon the scalp, and is often multiple. It is a broad, slightly-elevated formation, which is marked at its edges by numerous digitations, giving it a crab-like appearance; indeed, a superficial observer might mistake it for an insect, were it not for its immobility.

(*e.*) *Verruca acuminata.*—This variety is very frequently moist ("moist wart"), and has a great tendency to occur on the genital organs. In the male it is usually encountered on the glans and inner surface of the prepuce, while in the female the inner surfaces of the labia are most frequently attacked. It is very apt to accompany venereal affections as the result of the action upon the parts of irritating discharges, hence it is sometimes termed a "venereal wart;" but it cannot be regarded in the light of a venereal affection, as it is often met with in those who have never had venereal disease, and is found on other parts, especially where opposed surfaces are in contact as the result of the heat, friction, and moisture to which they are exposed; hence we often meet with it at the anus, umbilicus, axillæ, where the pendulous mamma rests upon the skin beneath, and between the toes. As its name implies, this variety occurs in groups of acuminated elevations of various shapes and sizes, sometimes forming prominent masses of vegetations, sometimes—where the warts are exposed to mutual pressure—thick, fleshy excrescences. They may be either sessile or pedunculated; when situated on a free surface and kept dry, they may have the same colour as that of the normal skin; but they often have a pink or even bright red tint, according to the degree of their vascularity and the thickness of their epidermic covering, the latter being often macerated. That their appearance varies much is shown by the fact that they have been compared to a cock's-comb, cherries, bunches of grapes, raspberries, and cauliflower (hence the term "cauliflower excrescences"). When situated on parts which are in contact, they often exude a yellowish, semi-purulent, and very offensive secretion, and occasionally they are more or less covered with crusts. They may exhibit a luxuriance of growth which is very remarkable, attaining the size even of a man's fist, and if not interfered with they may continue for many years.

The only affection for which they are likely to be mistaken is condylomata, which attack the same parts. And it is very important to be able to distinguish them, seeing that the latter are undoubted manifestations of syphilis and demand the use of antisyphilitic remedies. In the latter, we generally can obtain a history of syphilis, hereditary or acquired, and we usually, though not invariably, find that they occur in company with other manifestations of secondary syphilis, such as roseolar and papular syphilides, superficial ulceration of the mouth and throat, enlargement of the superficial glands, nocturnal rheumatism, &c. Further, they do not present a warty appearance, being firm, fleshy tubercles, which are flat upon the surface if opposed to one another, and the secretion in which they are generally bathed is contagious and capable of giving rise to syphilis by inoculation.

(*f.*) *Verruca seborrhœica.*—This is the most appropriate place to consider the affection above named, and which was first described by Neumann under the title of Verruca senilis, or Keratosis pigmentosa.

Dr. S. Pollitzer,* of New York, has recently published a most instructive paper on the subject to which, in the following remarks, I am much indebted. Seborrhœic warts are met with almost exclusively in those who have passed middle life (hence the term Verruca senilis): they are almost invariably multiple, and have a tendency to occur in groups "forming straight or curved lines, following the natural lines of cleavage of the skin." They are met with on most parts of the body, but are rare upon the face, and the parts most frequently attacked, according to Pollitzer, are (1) the middle of the back, (2)

* *The Brit. Journ. of Derm.*, July, 1890, p. 199.

the lower part of the abdomen, (3) the sternal region, and (4) the front and sides of the lower part of the neck. They vary much in size (having a diameter of from 1 to 6 lines), and also in shape, though most of them are oval or rounded. Their edges are abrupt, and the small warts are more or less conical, while the larger ones are flat upon the surface; they are not much elevated, and have a soft and oily feeling.

In cleanly patients they are of a pale fawn colour, but, in those who neglect their ablutions, they have a dark or almost black colour, being covered with crusts which consist of fatty epithelial scales and foreign matter; and, when picked off, bleeding points are exposed. They may be removed, however, by friction with ether or benzine, when the original fawn colour is restored.

"The seborrhœic wart," says Pollitzer, "is characterised histologically by a slightly thickened stratum corneum, a considerably hypertrophied Malpighian layer, and, in the papillary and subpapillary layer, the occurrence of epithelioid cells, arranged in groups and lines separated by bundles of connective tissue, and terminating abruptly below the horizontal subpapillary plexus of vessels; together with a peculiar infiltration of fat, affecting the coil-gland epithelium, the middle and papillary layers of the cutis, and the epithelium of the rete Malpighii; and perhaps an atrophy of the sebaceous glands and hair follicles."

Treatment.—That which is most frequently adopted is to scrape or pare away the epidermic layers until the summits of the tender papillæ are reached, and then to touch the surface with a glass rod moistened with glacial acetic acid, fluid carbolic acid, acid nitrate of mercury, or potassa fusa, care being taken that the surrounding skin is spared. When the less energetic of these applications is used, it is generally necessary to repeat the application from time to time after again removing the epidermic layers; but when a strong application, such as potassa fusa, is employed, which often destroys the wart at one sitting, it may be well to protect the surrounding skin with a circle of wax. For this purpose, a small piece of wax is softened, kneaded into a ball between the finger and thumb, pressed firmly against the wart and surrounding skin, and then that portion of it which covers the wart is scraped away, leaving a ring of wax to protect the skin.

A more speedy and more satisfactory method of treatment in some cases is to compress the base of the wart between the fingers, and to excise it with a pair of curved scissors, the base being afterwards touched with nitrate of silver. Ligature, on the other hand, is not to be recommended unless in the case of those who are afraid of the knife, and in whom the warts are more or less pedunculated. An excellent method of treatment is to paint the warts daily with ʒi of salicylic acid dissolved in ℥i of flexible collodion, the surface being scraped before each re-application; or salicylic, or salicylic-creosote plaster may be applied and renewed daily, and with the best results.

We may deal with acuminated warts on the same principle, but, if they are not large, a simpler treatment is often effectual. In that case they may be washed with a lotion of permanganate of potash, 2 grains to the ounce, then dried, dusted with a mixture of equal parts of oxide of zinc and lycopodium, and the opposed surfaces separated by means of a piece of dry lint. The dressing should be repeated night and morning, or oftener if the parts do not keep dry so long, and it is often surprising how quickly they may thus be made to disappear.

A course of arsenic, in the case of multiple warts, is sometimes successful; and Dr. Colrat recommends a course of sulphate of magnesia for several weeks (in doses of 2 or 3 grains for children and 30 grains for adults, thrice daily), remarking that in very few instances does it fail to remove them.

2. ICHTHYOSIS.

Syn.—*Xeroderma*—*Fish-skin disease.* Germ., *Fischschuppenausschlag.* Fr., *Ichthyose.*

Ichthyosis must be regarded rather in the light of a deformity than of a disease. If we are guided by statistics, it is not a very common affection, as I find that it only occurred 8 times out of 2,000 private, and 101 times out of 38,054 consecutive hospital, cases of skin disease: this, however, is a fallacious criterion of its frequency, for I have often met with it accidentally, and medical men are not usually consulted with regard to its slighter manifestations when the skin is only dry and harsh.

Its **symptoms** are due to excessive proliferation of the cells of the epidermis—both of the horny and mucous layers—and to hypertrophy of the papillæ; these are often much elongated, and, in well-marked cases, on picking off the epidermic accumulations, they present little cavities on their under-surfaces, into which the elongated papillæ fitted. As the affection advances the whole of the corium suffers more or less, and is thickened, while there is a diminution of the fat in the subcutaneous cellular tissue, and a tendency to atrophy of the follicles of the skin.

When the affection is slight the skin, having lost its smooth, soft, elastic appearance and feeling, is thickened, dry, coarse, wrinkled, and discoloured. There is evidently defective action of the sudoriparous and sebaceous glands, with a tendency to exfoliation of the epidermis in the shape of furfuraceous scales, and it is to this mild form that the term *Xeroderma* is specially applied. In more pronounced cases, such as come more frequently under the observation of the physician, these characters are much exaggerated, and the scaly tendency is a much more prominent feature. At some parts the scales are small and bran-like, at others — following the normal markings of the skin — they assume the shape of little plates, which are free at their edges and firmly adherent at their centres, and like the scales of a fish (hence the term Fish-skin disease), while here and there—as at the edges of the axillæ, and on the front of the knees and ankles—they may form thick, polygonal, warty-looking masses, which are separated from one another by deep fissures reaching down to the surface of the skin, *Ichthyosis serpentina.* The affected surface has generally a dirty appearance as if it had not been washed, and although the scales may be glistening and silvery, or like mother-of-pearl, *Ichthyosis nacrea,* if soap and water is not freely used, they may become even olive-green, or black (Ichthyosis nigricans), especially where masses of epidermis have accumulated. In rare instances they form warty-looking elevations, sometimes even half an inch in height, projecting from the skin in rows somewhat like the quills of a porcupine, *Ichthyosis hystrix; I. cornea*—porcupine men. A very remarkable case of this kind was shown at the meeting of the Royal Society on the 16th March, 1731, by the Secretary, Mr. Machin. The patient—Edward Lambert—was then 14 years of age. "His skin (if it might be so called) seemed rather like a dusky-coloured thick case, exactly fitting every part of his body, made of rugged bark, or hide, with bristles in some places, which case covering the whole excepting the face, the palms of the hands, and the soles of the feet, caused an appearance as if those parts alone were naked, and the rest clothed. It did not bleed when cut or scarified, being callous and insensible. It was said he sheds it once every year, about autumn, at which time it usually grows to the thickness of three-quarters of an inch, and then is thrust off by the new skin which is coming up underneath.

"It was not easy to think of any sort of skin, or natural integument, that exactly resembled it. Some compared it to the bark of a tree; others thought it looked like seal-skin; others like the hide of the elephant, or the skin about the legs of the rhinoceros; and some took it to be like a great wart, or number of warts uniting and overspreading the whole body. The bristly parts, which were chiefly about the belly and flanks, looked and rustled like the bristles or quills of a hedgehog, shorn off within an inch of the skin." This boy's skin was "clear at his birth . . . and so continued for about seven or eight weeks, after which, without his being sick, it began to turn yellow as if he had had the jaundice; from which by degrees it changed black, and in a little time afterwards thickened, and grew into that state it appeared in at present." None of his brothers or sisters were similarly affected.

On the 23rd January, 1755, Mr. Henry Baker again brought this case under the notice of the Society, the patient being then about 40 years of age, and in perfect health, but still presenting the deformity above described. He had had smallpox, and had been twice salivated, on all of which occasions the disorder temporarily disappeared. He had had six children, all of them presenting exactly the same deformity.

"It appears, therefore," said Mr. Baker, "past all doubt, that a race of people may be propagated by this man, having such rugged coats or coverings as himself: and, if this should ever happen, and the accidental original be forgotten, it is not improbable they might be deemed a different species of mankind; a consideration, which would almost lead one to imagine that, if mankind were all produced from one and the same stock, the black skins of the negroes, and many other differences of the like kind, might possibly have been originally owing to some such accidental cause."

Ichthyosis usually attacks the whole of the cutaneous envelope, although in different degrees, but the axillæ, flexor surfaces of the joints, face, palms, and soles often escape in great measure or entirely. The extremities are almost always most affected, especially the extensor surfaces of the joints. It attacks both sexes with equal frequency, although it is often limited to one sex in a given family, and all ranks of the community are liable to it: it is often hereditary, and is usually nearly congenital—at least it tends to commence within the first year or two of life, and to increase gradually until the period of puberty, when it usually becomes stationary.

In exceptional cases a temporary, or even permanent, cure follows upon an attack of severe constitutional disease, such as one of the specific fevers. In an interesting case met with by Hebra, "a high degree of I. cornea, diffused over the skin on the usual positions, and which especially affected the hypogastric region in the form of black, horny spines, was permanently cured by a severe attack of variola." "In this case," he says, "we only noticed pocks on those parts of the skin which were free from the ichthyosis, such as the face, the neck, the armpit, the bend of the elbow, the palm of the hand, the navel, the genitals, the inguinal region, the ham, and the sole of the foot. Nevertheless, a very copious desquamation ensued on the other parts of the skin, exempt from the variola, and covered with ichthyotic masses; so that, by this means, the scales belonging to the ichthyosis were thrown off, and they did not again make their appearance. I saw this patient during his attack of variola in my smallpox wards, and also fifteen years later, when I was able to convince myself of the non-appearance of the ichthyosis. Neither scaliness, nor pigmentation, nor thickening of the skin was to be detected on the patient, so that no one would have been in a position to recognise, from his then condition of skin, the ichthyosis, which had been present fifteen years before." * This affection is always worse in winter than in summer, no doubt owing to the greater functional activity of the glandular apparatus of the skin during the summer months, a fact which must be borne in mind in reference to treatment.

Treatment.—The administration of *thyroid extract* is well worthy of a trial, and sometimes yields excellent results, just as it does in some cases of psoriasis (see p. 402). The only other constitutional treatment from which benefit is said to have accrued is from a long course of *arsenic*, although it must be admitted that that medicine has not usually the influence over it which one might *a priori* expect. Generally, therefore, we must resort to local treatment. This consists in the frequent use of baths—warm alkaline, vapour, or Turkish—while the subcutaneous injection of pilocarpine, in doses of gr. $\frac{1}{4}$ to gr. $\frac{1}{2}$, may be used from time to time with the view of further acting upon the sudoriparous glands. The parts should be thoroughly scrubbed with Unna's superfatted marmor or sulphur soap, soft soap, or a mixture of two parts of potash soap dissolved in one of rectified spirit, with the addition of a little scent, such as spirit of rosemary, to make it more agreeable. This may be left upon the skin all night and removed in the bath in the morning. In addition to this, oleaginous substances should be freely rubbed into the whole skin, night and morning, until it has entirely recovered its healthy appearance, after which their application once a day will be sufficient. The best basis for ointments is undoubtedly pure lanolin or glycerine, which may be mixed with cold cream, in the proportion of two or three parts of the latter to one of the former, or the glycerine may be combined in other ways, as, for example, with bicarbonate of potash and oleate of bismuth.† Kaposi advises washing with naphthol soap, and inunction with a 5 per cent. naphthol ointment. Ointments containing 3 to 10 per cent. of sulphur, resorcin, and salicylic acid are also of use.

In obstinate cases the patient may try the effect of wearing an underdress made of pure vulcanised (Para) india-rubber.

By such means it is easy in most cases to remove the deformity in great measure or entirely, and to make the patient feel comfortable,

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* "On Diseases of the Skin," by Ferdinand Hebra, M.D. Vol. iii., p. 61. *New. Syd. Society's translation.* London, 1874.

† ℞ Potassæ bicarbonatis, ...	ʒiij.
Glycerini (Price), ...	℥iss.
Ungti. bismuthi oleatis, ...	℥iv.

(Allen et Hanbury.) —*M.*

but if any permanent benefit is to be obtained it is necessary to persevere with our remedies for years. Finally, it is right to remind the reader that the affection may disappear temporarily, or even permanently, under the influence of serious ailments, especially the exanthemata—such as measles and smallpox.

SCLERODERMA ADULTORUM.

Syn.—*Scleriasis—Sclerema—Elephantiasis sclerosa (Rasmussen)—Addison's Keloid—Hide-bound Disease.*

Scleroderma (σκληρὸς, hard; δερμα, skin) is probably the result of some obscure disturbance of the nervous system, leading, according to Kaposi,[*] to "a diffused thickening and stasis of lymph in the cutis. In consequence of the thickening of the lymph, which results, not from local conditions, but from a generally abnormal state of the nutritive processes, this stagnates in the interstices of the tissue, which, according to the views as to the commencement of the lymph passages, are considered to be lymph spaces. Hence, the early, but already firm, rigid infiltration of the cutis. Should the flow of the lymph again become free, then also, the infiltration disappears completely, and the cutis returns to its normal condition. Should the stagnation continue for a longer time, then, out of the accumulated superfluity of nutrient material, the previously normal connective tissue is formed in excess, becomes denser and increased in quantity. The interstices of the tissue become narrower and narrower, and consequently the latter can only be infiltrated by a smaller quantity of fluid. The connective tissue texture becomes less and less juicy, retracted, and shrunken."

According to Rasmussen, the first stage is characterised by copious development of lymph cells—especially in the perivascular lymph spaces, in the corium, subcutaneous cellular tissue, and subjacent parts, so that the skin is swollen, thickened, and infiltrated. From these cells connective tissue and even elastic fibres are developed which ultimately contract, converting these parts into a dense compact mass, almost identical with cicatricial tissue. The blood-vessels are closely embraced by this new tissue, and are proportionately narrowed, while the fat cells in the subcutaneous tissue are very scanty. The papillæ and glandular structures are not seriously involved, unless in the advanced stage of the disease, and the structure of the epidermis remains normal, although there is an excessive deposit of pigment in the rete mucosum and subjacent parts.

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[*] "On Diseases of the Skin," by Ferdinand Hebra, M.D., and Moriz Kaposi, M.D. *New. Syd. Society's translation*, vol. iii., p. 123.

The **symptoms** are pretty much what might be expected from what has just been stated. At the affected parts, the skin has a yellowish or waxy colour, feels stiff and indurated, so that it cannot be pinched up between the finger and thumb, and the movements are more or less impaired : this induration in most places gradually shades off into the healthy skin. The surface is generally smooth and shining, and at the periphery in the early stage, a slight blush of redness may be observed. Sometimes the surface has a pale, yellow tint owing to pigmentary deposit, especially towards the borders of the affected parts, or the pigmentation may be so arranged as to give a speckled appearance to the surface. There is no pitting upon pressure as a rule. As the affection progresses, the pigmentation becomes more marked, the induration increases and extends, and the skin becomes hide-bound. Finally, contraction sets in which seriously interferes with movements, and which may lead to considerable deformity, especially when the face is attacked. In this stage, the skin is apt to have a dry and parchment-like appearance. In exceptional cases the mucous membrane is attacked, especially that of the lips, gums, tongue, soft palate, and pharynx. The sensibility is little if at all impaired, but occasionally the parts are the seat of slight burning, tingling, or itching, and even pain may be complained of, especially on pressure. The temperature of the affected parts is usually from one to two degrees below the normal, and they feel cold.

The general health is not usually interfered with, although occasionally dyspnœa is present when the chest is extensively involved owing to the rigid and contracted state of the skin ; and, in a case reported by Hilton Fagge, the patient died of exhaustion from inability to eat, owing to rigidity and contraction of the mouth and jaws. Even gangrene has been known to ensue. There is a specimen in the Museum of the Western Infirmary of Glasgow, taken from a patient of my colleague's, Dr. A. Patterson (Series VIII.—Skin and Organs of Sense, No. 10), in which the disease affected more particularly the face, front and upper part of the chest, forearms, and legs up to the middle of the thighs. In both hands there was dry gangrene affecting the thumb and the last two phalanges of the fingers. The toes also of both feet were similarly affected.

This disease may attack any portion of the body, but the arms, neck, upper part of the trunk, and face are the parts most frequently implicated, and different parts of the body are apt to be successively attacked, the affection being usually more or less symmetrical.

The following case illustrates the main features of this curious affection :—Janet A., shopkeeper, came to the Glasgow Hospital for Skin Diseases, on the 1st January, 1867. Her general health was not quite up to the mark; her tongue was very white and fissured, and the papillæ were prominent. Her appetite was extremely capricious, her bowels very costive, and she slept badly. The disease set in about the beginning of February, 1866, and was attributed to cold caught during the frosty weather. It implicated both arms, the right much more than the left, but did not extend beyond the shoulders. The skin, in irregular patches, was deeply pigmented, especially on the back of the hand and along the outside of the forearm. The whole arm looked a little thicker than natural, and the skin was tense and glossy. Its natural softness, too, had given place to a firm, doughy feeling, but without any trace of œdema. The forearm was much more affected than the upper arm, and the hypertrophy was by no means limited to the brown parts. Owing to the rigidity, the hand could only be partially closed. She complained of neither pain nor uneasiness of any kind. Notwithstanding the use of tonic-aperients and of tonics, the disease had made some progress when she was again seen on August 22, and there was a tendency at some parts to eczematous complication. On October 12, however, having just returned from a visit of a month's duration at Arran, she came to me looking much healthier, and feeling "a great deal better in herself." The tendency to eczematous complication had disappeared. The arms, especially the upper arms, were softer, the pigmentation paler, and she could close her left hand a little better than previously. Since that time I have not heard anything of her.

This is the diffused form of the disease to which the term scleroderma is confined by some authors, but there is a circumscribed form, which may occur alone, or, more rarely, in combination with the other, to which the term *Morphœa* has been given.

Morphœa occurs in patches which may be elongated and follow the course of superficial nerves, especially the supra-orbital; but more commonly they are oval or roundish, and about the size of a florin or larger. They are generally unilateral, are not elevated, but are firm to the touch, and smooth and polished on the surface; at first they are red, but soon they become white, being surrounded by a lilac ring resulting from dilatation of the capillary vessels. When very white the term *morphœa alba* has been given to them, when much pigmented *morphœa nigra*, and in the atrophic stage, when they have a dry and parchment-like appearance, *morphœa atrophica.* In rare cases the disease is associated with true keloid (Alibert's keloid), an instance of which is reported by Mr. Jonathan Hutchinson.

Scleroderma generally sets in gradually, months often elapsing before it attains its full development. Sometimes a spontaneous cure results, the skin ultimately resuming its normal appearance and feeling. Or it may continue for months or years, in which case atrophy of the affected parts, immobility, contraction, and deformity may be prominent and permanent features.

It is met with most frequently among the lower classes, is much commoner in females than in males (in the proportion of 3 to 1), and, while it occurs at all ages, it is oftenest met with in early adult or middle life. It is an exceedingly rare affection, as is proved by the circumstance that the statistics of the American Dermatological Association record but two instances among 16,863 cases of skin disease,* while my own statistics show 10 cases (including 2 of morphœa) out of 40,054.

Treatment.—The constitutional treatment is such as is calculated to improve the general health; hence, cod-liver oil, tonics, especially nerve tonics, such as strychnia and arsenic, and, above all, change of air and scene are to be recommended. As regards local treatment, massage may be resorted to, as well as the use of the continuous current applied to the affected parts and also to the spine. An ointment of the black oxide of copper, 2 grains to the ounce, is recommended by Rasmussen, or Shoemaker's oleate of copper ointment may be used instead. In obstinate cases more powerful means of local stimulation may be resorted to, especially when the patches are circumscribed, such as the application of liniment of iodine and blistering fluid.

SCLERODERMA NEONATORUM.

Syn.—*Sclerema neonatorum*—*Algor progressivus*—*Induratio telæ cellularis neonatorum*—*Sclerema of the New-born.*

This disease, which bears a superficial resemblance to scleroderma of adults, is usually either congenital or sets in a few days after birth. It generally commences in the lower extremities, and rapidly spreads upwards, until considerable portions of the body are involved, or even the whole surface, including the face. The affected parts are cold, hard, swelled, and œdematous, the surface being tense, glistening, and red, or at parts (the toes especially) livid. As the affection spreads upwards, the swelling and œdema disappear from the parts first attacked, while the hardness increases, and the rigidity is such that movement is difficult if not impossible. The coldness of the surface, too, is more pronounced, and the skin becomes thin, wasted, and wrinkled like that of a corpse in a state of *rigor mortis.*

When the face is involved the features are immobile, the eyelids are half-closed, the mouth is contracted, and the child soon dies of inanition.

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* *A Practical Treatise on Diseases of the Skin*, by Louis A. Duhring, M.D. Philadelphia: J. B. Lippincott & Co., 1881. p. 373.

But, even independently of this, the case usually terminates fatally within a couple of weeks, as the result of complications (*e.g.*, ulceration or catarrh of the intestines, bronchitis, pneumonia, peritonitis, &c.), although in rare cases, and under favourable conditions, the temperature rises, the skin gradually resumes its normal character, and recovery takes place.

On making an incision into the affected parts after death, a yellowish serous fluid escapes with simultaneous disappearance of any œdema which may have remained, and the hardness of the skin in great measure disappears : but the subcutaneous cellular tissue remains hard, and contains a stiff, firm, "stearine-like" deposit.

We are altogether ignorant of the true nature of this curious complaint, although it is supposed that disturbance of the capillary circulation of the surface of the body is the immediate cause of the phenomena observed, and some authorities are further of opinion that this results from pre-existing morbid changes in internal organs, such as atalectasis, malformation of the heart, hydrocephalus, cerebral hæmorrhage, &c. It seems to occur most frequently in premature or otherwise weakly infants, or in those whose diet and hygienic surroundings are defective, and not unfrequently there is evidence of a syphilitic taint.

The **treatment** is generally unsatisfactory. In addition to attacking any morbid conditions, such as diarrhœa, pneumonia, &c., which may be present, our principal aim should be to support the strength of the child. It should be kept as warm as possible, and we should endeavour to stimulate the cutaneous circulation by means of frictions with warm oil and the like. In the more severe cases, however, we are powerless to prevent a fatal issue.

RHINOSCLEROMA.

Rhinoscleroma, a very rare disease in this country at least, was first described by Hebra and Kaposi in 1870,* the former of whom gave it its present name. It develops very slowly, and years may elapse before it is at its height. It almost invariably attacks the skin or mucous membrane of the ala or septum nasi, and neighbouring portions of the upper lip, and is characterised by the formation of isolated or confluent tubercles, or plate-shaped structures which are sharply demarcated from the surrounding healthy skin, and of a wooden or almost ivory hardness. The parts are either of the same colour as the normal skin, and smooth upon the surface, or of a bright-red or brownish-red colour, with dilated vessels coursing over them, and are devoid of hairs or sebaceous follicles. The epidermis sooner or later tends to become dry and cracked, and fissures often form in the situation of the normal furrows of the skin: these secrete a viscid fluid which dries into yellowish tenacious crusts. On compressing the tubercles some pain is experienced, and they are felt to be possessed of some degree of elasticity, but the skin is not movable over them. Either one or both alæ nasi may be implicated, and at last the nostrils may be so completely occluded, that the patient can only breathe through the mouth. Occasionally the palate, larynx, and pharynx are somewhat similarly affected, and wherever the disease may be, the neighbouring cartilage, periosteum, or bone may ultimately become implicated. There is, however, no tendency to ulceration, although slight excoriations may be observed, and no case of spontaneous cure has been recorded. The ætiology of this curious affection is involved in mystery, but it is generally met with in adult and middle life, and it attacks males and females in nearly equal proportions.

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* In the present article, I draw largely from their description. "On Diseases of the Skin," by F. Hebra, M.D., and M. Kaposi, M.D. *New Syd. Soc. translation*, 1874. Vol. iv., p. 1.

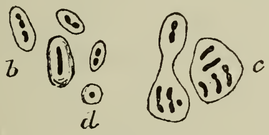

Fig. 16.

Bacteria of rhinoscleroma—*b*, rods surrounded with their capsules; *c*, group of bacteria surrounded by a single capsule; *d*, bacteria seen from above, and resembling a coccus.

On microscopic examination of one of the indurations, which can be incised much more readily than their hardness to the touch would lead us to suspect, the epidermis is found to be unaffected, while the papillæ and superficial layers of the corium are densely and uniformly packed with cells, which are smaller than granulation cells, and which are imbedded loosely in the connective tissue. Their nuclei are for the most part distinct, but small and finely granular. The deeper layers of the corium are the seat of a dense network of connective tissue. Histologically Kaposi considers that the growth is most closely allied to the forms of small-celled or granulation sarcomata.

Frisch has examined twelve cases, in all of which he found a species of bacteria, by staining with aniline colours. He found them almost exclusively within the cells, and under a low power they appeared almost spherical, and might readily be mistaken for cocci, but under a high power they had a rod shape, the rods being very short.* MM. Cornil and Alvares state that the bacteria are capsulated, and surrounded by a dense transparent envelope seen in the section of the diseased tissues as well as in their cultivations on gelatine.†

* *Wiener Med. Wochenschrift.* No. 32, 1882.

† See art. by Ernest Hart, *Brit. Med. Journ.*, Feb. 16, 1889, p. 379.

Diagnosis.—The only diseases likely to be mistaken for rhinoscleroma are syphilis, epithelioma (rodent ulcer) and keloid.

From *Syphilis* it is distinguished by the absence of a syphilitic history and of other concomitant syphilitic manifestations, and, above all, by the fact that it is not influenced by antisyphilitic treatment. The indurations of rhinoscleroma, too, are very much harder, they have no tendency to spread in circles, or segments of circles, nor to ulcerate. They are never distinctly coppery, nor do they undergo spontaneous resolution.

Rodent ulcer has no special affinity for the *alæ nasi;* its spreading edge is more or less circular, elevated, and pearly-looking; it has a much greater tendency to attack old people; and it is occasionally the seat of shooting pain.

It is only the plate-shaped variety of rhinoscleroma that could be mistaken for *Keloid,* but I have never met with a case of keloid attacking the *ala nasi,* and as has been remarked by Kaposi, a microscopic examination would settle the point, for, while keloid consists wholly of fibrous tissue, rhinoscleroma consists mainly of cell infiltration of the corium.

Treatment.—In many cases it is probably best not to interfere at all, because, when removed, the disease almost invariably returns. But it is often necessary to prevent closure of the nostrils by the use of sponge tents or of laminaria, and, if occlusion has taken place before we see the patient, a passage may be made, either by excision or destruction of a portion of the deposit by means of caustic, such as potassa fusa or chloride of zinc, great care being taken to limit their action to the diseased structures. Lubliner* has recorded a typical case of rhinoscleroma in a man, aged 35, which almost entirely disappeared after an attack of typhus, the nasal obstruction, which had been almost complete, vanished, only slight thickening of the mucous membrane remaining.

XERODERMA PIGMENTOSUM.

Syn.—*Dermatosis Kaposi* (Vidal)—*Liodermia cum melanosi et telangiectasia* (Neisser)—*Melanosis lenticularis progressiva* (Pick)—*Angioma pigmentosum et atrophicum* (Taylor)—*Atrophoderma pigmentosum* (Crocker).

This disease, which was first described by Kaposi in 1870, is a very rare affection; indeed, up to the year 1891 only about sixty cases have been recorded. Dr. Radcliffe Crocker* tells us that thirty-four cases, collected by him, occurred among seventeen families (and twenty-six of them in nine families), so that the influence of family predisposition is well marked, although in no case has the disease been hereditary. It seems to attack males and females with equal frequency, but, when more than one member of a family is attacked, it is usually limited to those of the same sex. The most remarkable illustration of this is supplied by Ruder, that of a family of thirteen, eight boys and five girls. All the girls escaped, but seven of the boys were attacked. There are, however, exceptions to this rule, as in the case soon to be narrated. It has a tendency to set in in spring and summer, so much so, that Vidal and Neisser are of opinion that insolation may be an exciting cause. It almost invariably commences in early life, generally within the first two years; but in two cases in Dr. Crocker's table the patients were nine and sixteen years old respectively at the onset, and Riehl had a patient in whom the disease set in at the age of forty-three.

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* *Berlin Klin. Wochenschrift,* Oct. 5, 1891.

Four sets of lesions are usually observed in fully developed cases, and, as they generally follow one another in the order about to be mentioned, they may almost be regarded in the light of four stages.

The first is characterised by the development of little pigment spots, identical in appearance with, and sure to be mistaken for, ordinary freckles, all the more as they are found upon the uncovered parts—viz., face, neck, hands, arms, and legs, although the trunk of the body occasionally suffers later on. In some cases the pigment spots are preceded for a few days by the development of little congested spots somewhat like those of measles, although this is the exception. By degrees the pigment spots tend to become much darker in colour, and sometimes, by aggregation, they may become irregular in shape, and attain the diameter of an inch or more.

Sooner or later, it may not be for months or even for years, the second stage is reached, which consists of the formation of little congeries of dilated capillary vessels (telangiectases) between the pigment spots, and about the same size as them, though they are not nearly so plentiful—occasionally they are slightly elevated.

In the third stage, many of these telangiectases are replaced by an atrophic condition of the skin, although some hold that the telangiectases succeed, and are consequent upon, obliteration of vessels in the atrophic areas. The latter are for the most part from the size of pins'-heads to lentils, but they may assume various shapes and sizes, and the skin at these parts is very white, and either smooth and cicatricial in appearance, or thin, dry, and wrinkled.

In the last stage, which may not appear for a good many years (in one case, not for thirty), at some parts, especially on the *right* side of the face (Crocker), the vascular or pigment spots become warty and ulcerate; and fungoid growths develop, which sooner or later terminate the life of the patient. Some hold with Taylor and Crocker that these are papillomatous, while others consider them to be epitheliomatous in character, as they certainly were in the case which follows. Perhaps they are sometimes the one and sometimes the other. It is only in this last stage that the general health suffers. The ultimate prognosis is therefore grave, although, in some instances recorded, the last stage was not reached when they were reported.

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* *Medico-Chirurgical Transactions*, vol. lxvii., p. 169.

We know little or nothing of the true nature of this curious affection, and we are equally in the dark as to its treatment, which must, therefore, be conducted on general principles. The growths, however, may often be kept in check for a long time by covering them with salicylic plaster, or dusting them with aristol, or painting them once or twice a week with Fowler's solution.

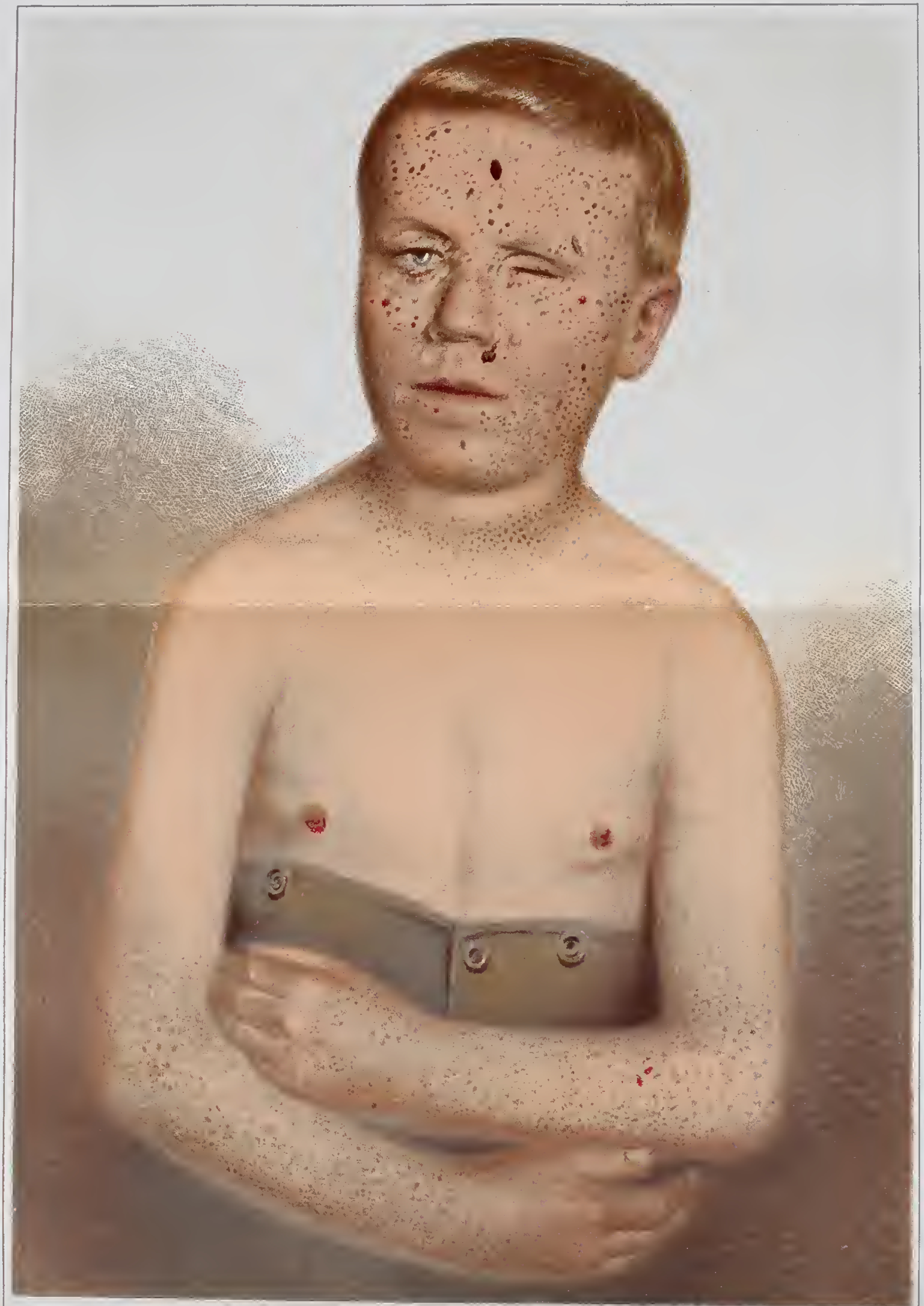
The following is a good illustration of this strange disease:—

"A healthy-looking boy, nine years of age, came under my observation on June 13th, 1887, with an eruption upon the face, neck, forearms, hands, legs, and feet. His father and mother were in good health, but his only sister was similarly affected, and died at the age of nine of some chest affection. There is no history of any of his other relatives having suffered from the disease.

"At the age of two, a number of sun-spots or freckles made their appearance upon his face and neck; they entirely disappeared during the winter months, but returned each summer with increasing intensity. At last they became permanent, and for several years have been very dark—at parts almost approaching black. Soon after the onset of the pigmentation in the face and neck, the other parts mentioned above became similarly affected, and pursued the same course.

"Within the last ten months, new features have appeared upon the face, and upon it alone—namely (1) little reddish vascular spots, (2) cicatricial spots, and (3), here and there, small warty-looking nodules.

"At present the characters of the eruption on the face are very typical, and are as follows:—The whole skin is very much darker than natural and than it used to be, and is profusely studded with deep pigmented spots, of irregular outline and varying depth of tint; some of them are as small as pins'-heads, others as large as peas, and, in some places, they seem to have coalesced, thus forming tracts of larger size. Between the pigmented spots, little red non-elevated patches are to be seen, having a stellate appearance, and composed of dilated capillaries (telangiectases). On the ears the capillary vessels are very much dilated



Maclure Macdonald & C° Lith^{rs} Glasgow

"British Medical Journal."
June 8th. 1889.

and conspicuous. In addition to these, though much less numerous, are observed small, white, glazed, atrophic areas, mostly surrounded by a zone of dilated capillaries. These are very irregular in shape, and vary in size from that of a split-pea to that of a finger-nail. Lastly, a few small, rounded nodules are scattered over the face. These are very distinctly elevated, and have a diameter of from one to two lines. Some of them are papular in character, while others have ulcerated, and are more or less covered with crusts. The largest and most striking of these little growths appeared upon the inner side of the left eyeball, and was removed by Dr. Reid. It soon, however, reappeared, extended rapidly, and destroyed the eyesight. Finally, the eye had to be enucleated." The nodules on the face were decidedly kept in check, and a few of them completely disappeared as the result of the application of salicylic plaster.

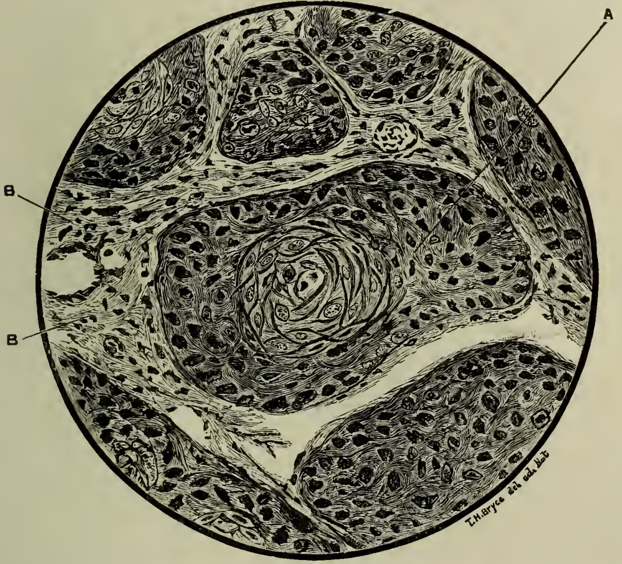


Fig. 17.

Xeroderma pigmentosum × 250; tumour from beneath outer canthus.—A, "cell nest," highly magnified. B, fibrous stroma.

Sections from the growth on the eyeball, as well as from one of the nodules removed from the forehead, leave no doubt as to their nature, showing as they do the typical epithelial processes and laminated capsules of epithelioma. (See Figs. 17 and 18 and accompanying plate).

This boy, after remaining in the Western Infirmary for some months, went home, but was readmitted.

[*] On April 20th, 1891, his general health was still good, but the

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[*] Reported by Wm. R. Jack, M.B.

disease was further advanced. A fungating growth had appeared on the right side of the nose, near its tip, and there was a tumour about the size of a walnut in the substance of the right cheek, in front of the ear. During his stay in the Infirmary this tumour became fluctuant and was opened, giving escape to a quantity of thick, creamy pus. The wound showed no tendency to heal, and the nasal growth, though checked for a time by the application of aristol, ultimately commenced to spread and to destroy the tissues. An indurated mass formed in the left side of the upper lip, ulcerated, and gave rise to similar fungous granulations, which also appeared in the edges of the wound upon the cheek. All three sores continued to spread and destroy the parts around them, that on the cheek extending backwards to the auditory meatus, and downwards below the ramus of the jaw. The tumour on the lip prevented the ingestion of solid food, and liquid nourishment could, after a time, be taken only with difficulty. A sinus formed between the nasal and oral cavities, and the upper lip sloughed away

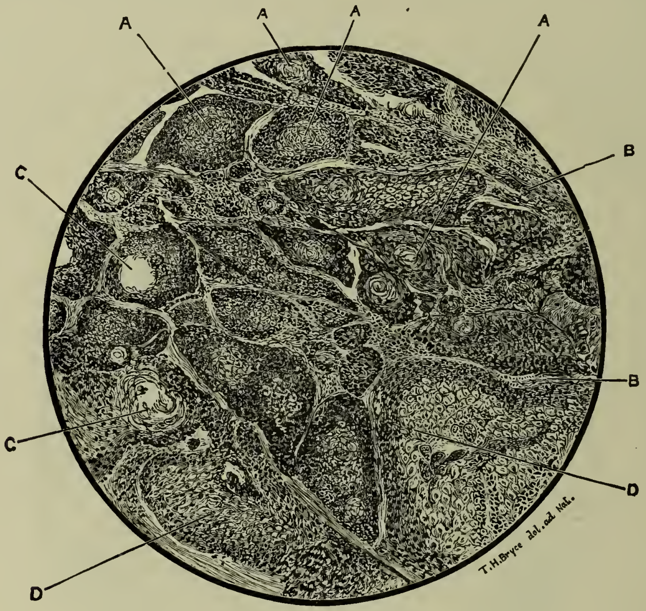

Fig. 18.

Xeroderma pigmentosum × 35; tumour from beneath outer canthus.—A A, cell nests—peripheral irregular epithelial cells with large nuclei. Central cells—cornified and arranged round centre in a laminated fashion. B B, fibrous stroma—here and there between epithelial masses in stroma collections of round cells. C C, cell nest, from which central cornified masses have fallen out. D D, epithelial masses of large size, central cells of which have become, to a certain extent, cornified, the nuclei being indistinct. Peripheral zone of irregular epithelial cells with large deeply stained nuclei.

from the alveola on the left side, forming a large pendent flap which interfered with breathing and eating. It was therefore removed, as were the incisor teeth, which lay loosely in their sockets. Emaciation now set in, and progressed *pari passu* with the progress of the ulcers. The palatal and superior maxillary bones were attacked, and on the right side the ramus of the jaw and the carotid artery were laid bare. The freckles upon the neck, arms, and legs, meanwhile, remained in the same condition as before. By the end of April, 1892, the two anterior ulcers had completely coalesced so as to form one large triangular excavation, extending from slightly above the root of the nose to the lower lip. The nose and upper lip had completely disappeared, leaving the naso-oral cavity exposed to view. The edges of the ulcer were much indurated, red, and protruding considerably above the surrounding skin, which was infiltrated for a considerable distance. Its floor was irregularly eaten out, and exuded a dirty-yellowish and foul-smelling pus. The ulcer upon the cheek presented similar characters, involving the external meatus, the zygoma, and the ramus of the jaw. Some time previously an abscess, which had formed behind the right ear, was opened and drained. The patient gradually became more and more emaciated, and died on Sept. 26th, at the age of 13, from a slight hæmorrhage from one of the small vessels of the neck. To the end there were no head symptoms, nor was there any rise of temperature.

The autopsy, which was conducted with great care, yielded the following results :—The two ulcerating cavities had coalesced to form one huge excavation, the greatest depth of which in the face was about 1½ in., in the neck about ¾ in. The destruction involved the external auditory canal and the lower portion of the temporal bone, the zygoma, which had entirely disappeared, the posterior half of the lower jaw, including the condyles, the palatal and the superior maxillary bones. In the upper part of the floor of the ulcer, behind the right orbital plate, there was an opening admitting the point of the finger, into which a probe passed easily 1 in. upwards and 3 in. in a backward direction.

The membranes of the brain were œdematous. On the removal of the brain the anterior part of the under surface of the temporo-sphenoidal lobe was found to communicate with the floor of the ulcer through the above aperture. Almost the entire floor of the middle fossa was ulcerated away, and the membranes were firmly adherent round the gap, limiting the extent of suppuration in the brain substance. Suppuration did not involve the lobe deeply. There was no infiltration in other parts of the brain or membranes. The gap in the middle fossa measured 2 in. by 1½ in. There was also a large gap in the lower part of the frontal bone, measuring 1½ in. by 1 in. The anterior part of the ethmoid and of the nasal bones was destroyed. The left optic nerve was atrophied and soft as compared with the right (the corresponding eye had been enucleated in 1887). See Figs. 19, 20, 21.

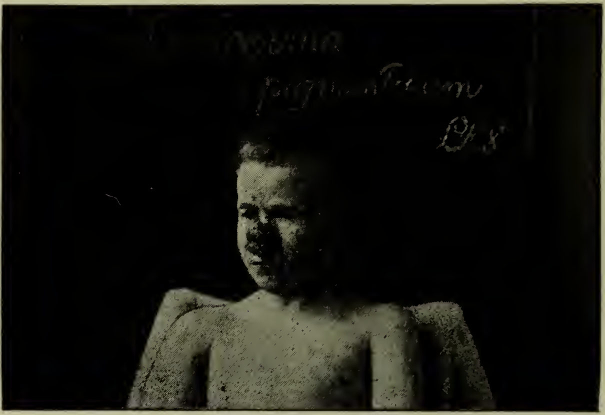

Fig. 19.
Condition one year before death. October, 1891.

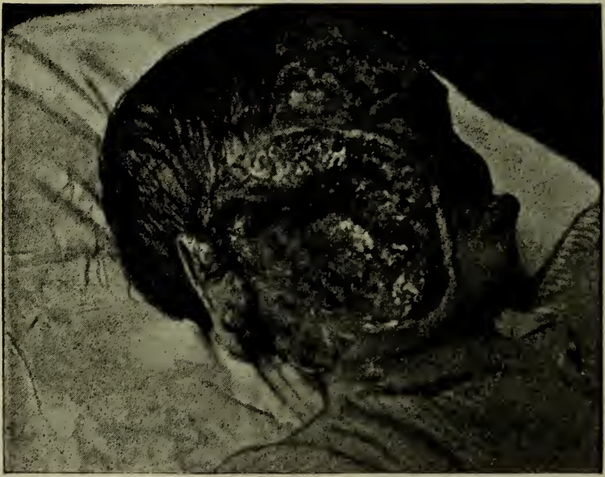

Fig. 20.
Condition six weeks before death. September, 1892.

There was no lesion in any of the other organs.

I was much interested in the results of the *post-mortem* examination, thinking it highly probably that similar growths would be met with in some of the internal organs, although there were no

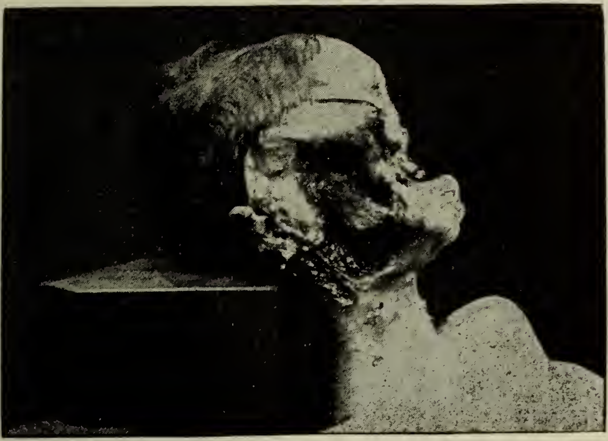

Fig. 21.
Condition after death. October, 1892.

symptoms of such a condition during life. But I was surprised to find that the other organs and tissues of the body were unaffected.

ELEPHANTIASIS.

By G. A. Turner, M.D.

Syn.—*Elephantiasis Arabum—Bucnemia tropica—Elephantiasis Indica—Morbus elephas—Pachydermia—Phlegmasia Malabarica—Spargosis—Elephant leg—Barbadoes leg, &c.*

This is a totally distinct disease from leprosy (Elephantiasis græcorum), with which it has sometimes been confounded. The term elephantiasis is, however, rarely now used as synonymous with leprosy, but is confined to the disease under notice.

Elephantiasis may be defined as a non-contagious disease, characterised, in its typical form, by the recurrence of febrile attacks similar to those of intermittent fever, each attack being accompanied by inflammation and progressive hypertrophy of the skin and subcutaneous cellular tissue of an extremity, or of the genital organs, and by enlargement of the lymphatics of the affected part, with slight swelling of the neighbouring lymphatic glands.

Geographical Distribution.—Solitary cases of the disease are probably to be found in most parts of the world, but it is endemic in certain tropical and semi-tropical countries. It is common in Egypt, Arabia, the East Coast of Africa, India, the Malay Peninsula, the East Indies, Cochin China, China, Japan, Polynesia (especially Samoa), Brazil, Barbadoes, and the West Indies.

Symptoms.—The first symptom of elephantiasis is usually a rigor, followed by a feverish attack, both of which may be more or less severe, and which in character are indistinguishable from an attack of intermittent fever. To this attack the name of "elephantoid fever" has been given. With the fever local symptoms show themselves—a leg, or an arm, or the scrotum, as the case may be, becoming inflamed, swollen, and tender. In women, the breast or labium is often the part implicated. The lymphatic trunks of the affected part are enlarged and painful, and the neighbouring glands are slightly swollen and tender. The constitutional symptoms pass off after a period varying from a few hours to a day or two, but the local disturbance very gradually subsides, and a certain amount of swelling remains for weeks, or months, or it may be even for years.

It very rarely occurs, however, except in the case of Europeans who seek change of climate at once, that a person escapes with only one or two attacks. In the ordinary course of the disease there is a repetition of the fever at irregular intervals. These intervals may vary from a few days to many months. As each attack is accompanied by a recurrence of the local affection, the part gradually becomes more and more hypertrophied, its size usually bearing a direct relation to the frequency of the attacks of fever and local inflammation. It is not always the same part, however, which is affected, and patients are frequently seen having two or more limbs in different stages of hypertrophy.

Between the attacks of fever the general health is good, and, after the growth has attained a large size, the disease often ceases altogether, or the attacks are very slight, and there is no further change in the part, which remains permanently enlarged. Sometimes, especially where the scrotum is affected, after a considerable size has been reached, a gradual, painless increase of the hypertrophy continues till the part has attained an enormous magnitude. The writer has seen and removed a scrotal tumour which measured 54 inches in circumference at the knees, almost touched the ground when the patient was in the erect posture, and weighed 80 pounds after removal; and there are cases on record of tumours considerably larger even than this. In such cases the prepuce is sometimes hypertrophied, and forms a twisted projection in front of the scrotum. Commonly, however, the penis is drawn in and lost in the enormously enlarged scrotum, the elongated prepuce opening by a navel-like aperture at some part of the anterior aspect, or even at the most dependent part, of the tumour. The skin covering the upper part of such tumours is skin which has been stretched and drawn down from the pubes and perinæum so that its anterior aspect is sparsely covered with hair, and the pedicle of the tumour extends from the pubis, occupies the whole of the perinæum, and terminates positively at the verge of the anus. The surface of the upper part of the tumour is generally smooth, but the more dependent parts have the skin thickened and rough, and occasionally ulceration destroys portions of the skin, leaving scars here and there in the hypertrophied mass.

The alteration in the appearance of the skin is even more apparent where the legs and feet are badly affected. In these cases there is produced an extraordinary irregular thickening of the skin, with hard masses and rugged folds about the ankles, the toes and feet almost disappear, and the resemblance to an elephant's leg, is very striking. Cases are not uncommon where the circumference at the calf of the leg is from 30 to 40 inches.

Parts seriously affected by elephantiasis are not tender, the hypertrophied skin loses its natural sensitivity, and rough handling gives rise to no uneasiness. The greatest inconvenience complained of is that of the bulk and weight of the mass, the sufferer's movements being often seriously interfered with, or rendered almost impossible. There is great difference in the rapidity of these growths, sometimes they are very rapid—a scrotum growing to a weight of 50 or 60 pounds within two years, but more frequently the enlargement is much more gradual. There is no enlargement of the spleen.

Pathology.—The disease consists of an enormous hypertrophy of the skin and subcutaneous connective tissue. The epidermis becomes thickened, rough, and often intersected with fissures. The papillæ are large and prominent. The cutis vera is immensely thickened and very tough. The connective tissue is greatly hypertrophied, and, in the case of elephantiasis of the scrotum, it forms the chief bulk of the tumour, the lymphatics being greatly dilated and filled with thick jelly-like albuminous fluid. There is also frequently a good deal of fatty degeneration, and sometimes, here and there, patches of calcareous infiltration. The penis and testicles are buried in the centre of the mass. The penis is invariably healthy, and the testicles are generally so, but large hydroceles very frequently exist, and in these cases the tunica vaginalis is very much thickened. In elephantiasis of the legs the intermuscular tissue, the periosteum, and even the bone may be hypertrophied.

Ætiology.—The disease is not hereditary, nor is it communicable. It is more common in hot than in temperate climates, especially where, as it has been said, "malaria and sea air mingle." It attacks both sexes, and may be met with at all ages, but it is most common among adults—children being very rarely affected. It has been affirmed that men suffer in larger proportion than women, and the dark-skinned races than the white. This probably is the case in some countries, but the explanation doubtless is, that men are more exposed to the noxious influences which cause the disease than women, and, similarly, the dark races are not so careful as white men, nor are they so well clad. In Samoa the disease is almost universal among adults, very few escaping it in lesser or greater degree, and there are few European residenters of long standing who can say they have no personal experience of it.

The view taken by Lewis, Manson, and others, is that elephantiasis, the somewhat similar disease which has been called lymph scrotum, and chyluria are all caused by the presence of a parasite—the filaria sanguinis hominis. In the article on lymph scrotum, which immediately succeeds this one, there will be found in detail the views on this question which Dr. Manson has so ably advocated. But those who hold this theory have yet to account for the presence of elephantiasis in many localities where the filaria is known not to exist. It is a curious fact, too, that though elephantiasis is so common in Samoa, lymph scrotum and chyluria may be said to be unknown. I have seen cases which were suggestive of lymph scrotum, but certainly none typical of the disease, and during the twelve years I was in practice in Samoa, I only met with one case of chyluria, and that in a Frenchman. The swelling of lymphatic glands in connection with elephantoid attacks in the Pacific is slight, and of a passing nature, naturally accounted for by the local inflammation. There is no permanent glandular enlargement.

Elephantiasis is probably more prevalent in Samoa than it is in any other part of the world, and, so far, investigations made in this country as to the presence of the filaria sanguinis hominis in the blood of persons who have been there, and who have suffered from the disease, have given negative results. While in Samoa I made many microscopic examinations with the view of deciding this point, but at that time the remarkable fact of "filarial periodicity" was not known, and as my blood specimens were always procured during the day, my work was valueless. Dr. Manson is now (October, 1893) engaged in an investigation of this question, and expects very shortly to have sufficient material from Samoa to enable him definitely to settle it.

Another theory regarding the disease is that it is of malarious origin, and closely akin in its nature to intermittent fever, while yet a third theory is that the elephantiasis of India and China, and that of the Pacific, are distinct complaints—that while the elephantiasis of the Pacific may be malarious in origin, that of India and China is not so.

The arguments which seem to me to favour the idea that the elephantiasis of the Pacific at all events is malarial in its origin may briefly be summarised as follows:—On many of the groups of the Pacific intermittent fever is very prevalent, and no elephantiasis exists, while in others, where apparently the same climatic conditions hold, elephantiasis is exceedingly common, while intermittent fever is unknown. On a few islands they coexist, but the result of very extended inquiries, made by me while resident in Samoa, showed very decidedly that where the one disease prevails the other is very little known, and *vice versâ*. In Samoa intermittent fever is never seen, but I have seen cases of elephantoid fever where the attacks recurred regularly every seventh day, until checked by treatment. It is much more common in low-lying swampy districts than in those which are on a higher level and dry. It is commonly associated with exposure at night, and Europeans who are very careful as to this, can almost certainly count on escaping the disease. I have myself had four attacks of it, two in the left arm, and one in the right arm and right leg respectively, the first attack having immediately followed unavoidable prolonged exposure at night, after I had been several years resident in Samoa without having any sign of it. In the case of Europeans who have had the disease, and who leave the islands before it has made much advance, a complete recovery is almost certain. In them, similarly to those who have suffered from intermittent fever, slight attacks may recur for a time after they come home, but these gradually lose force, and ultimately even hypertrophic changes, if they have not been to any great extent, disappear. Lastly, the medicines which we rely upon in intermittent fever, are those which prove most beneficial in warding off attacks of elephantiasis, and in mitigating their severity.

Prognosis.—In cases where the disease is arrested by change to a more healthy locality, or to a country free from the disease, the general health is not impaired, though the hypertrophy, if of any considerable size, seldom entirely disappears. In the few cases where the paroxysms of fever are very severe and quickly recurrent, the system is rapidly reduced, and a fatal result may be feared, but the large majority of patients do not suffer much except during the occasional attacks of fever, and from the inconvenience occasioned by the permanently hypertrophied parts preventing free physical exercise.

One remarkable opinion very strongly held by natives and by old white residenters in Samoa is, that elephantiasis may attack the internal organs, or recede there by metastasis after attacking some other part, and this form of the disease is very much dreaded. For many years I looked upon this belief as a myth, thinking that doubtless the sudden deaths cited in proof of it were of an entirely different nature. In the case of one European, however, I saw what seemed to be strongly confirmatory of the above: an attack of elephantoid fever, in a patient subject to these attacks, with accompanying inflammation and swelling of the scrotum, the local affection in the course of a few hours passing off, and being immediately followed by agonising pain in the bowels, the seat of which seemed again to pass upwards to the chest, and death rapidly supervened.

Treatment.—The febrile paroxysm may be checked, or very greatly modified, by the administration as early as possible of a 10 or 20 grain dose of quinine, or a dose of Warburg's tincture. This may be repeated, if necessary, in a few hours. The large doses of quinine sometimes cause vomiting, and are better tolerated if they are preceded by some aperient and diaphoretic. As preventive treatment, a steady course of quinine or arsenic gives admirable results, lengthening the intervals between the attacks, and very much mitigating their severity when they do come on. No remedy, however, is so potent as removal from the endemic area.

Surgical treatment is frequently necessary, especially where the scrotum is the part affected, and there operations, even where the mass is very large, give very favourable results. When the leg is affected, compression of the arterial trunk, or ligature of the main artery supplying the limb, has been followed by good results, especially in this country; in India, however, the operation is said to be only temporarily successful.

The following case, which was under the care of Professor M'Call Anderson, is a good illustration of the disease, and of the method of treatment just indicated:—"On the 22nd June, 1866, a young woman, seventeen years of age, was admitted into the Royal Infirmary of Glasgow, on account of an elephantine condition of the left leg, and a similar affection, in a minor degree, of the right.

"The disease commenced in the left limb about five years previous to admission, with an attack of inflammation of the skin, apparently of an erysipelatous character.

"She seems to have had about a dozen of these attacks of inflammation before Dr. Anderson saw her, each being succeeded by an increase in the size of the leg. She was seen during one of these attacks by his late clinical assistant, Dr. Alexander Forsyth, who reported that it was ushered in by sickness and vomiting, followed by febrile symptoms—the skin of the left leg becoming red, swelled, tense, and so painful as to prevent movement. The redness extended up to the middle of the calf, but there was no tendency to the formation of bullæ. In a few days, as the inflammation subsided, the parts became softer, pitted slightly on pressure, and presented a shrivelled appearance.

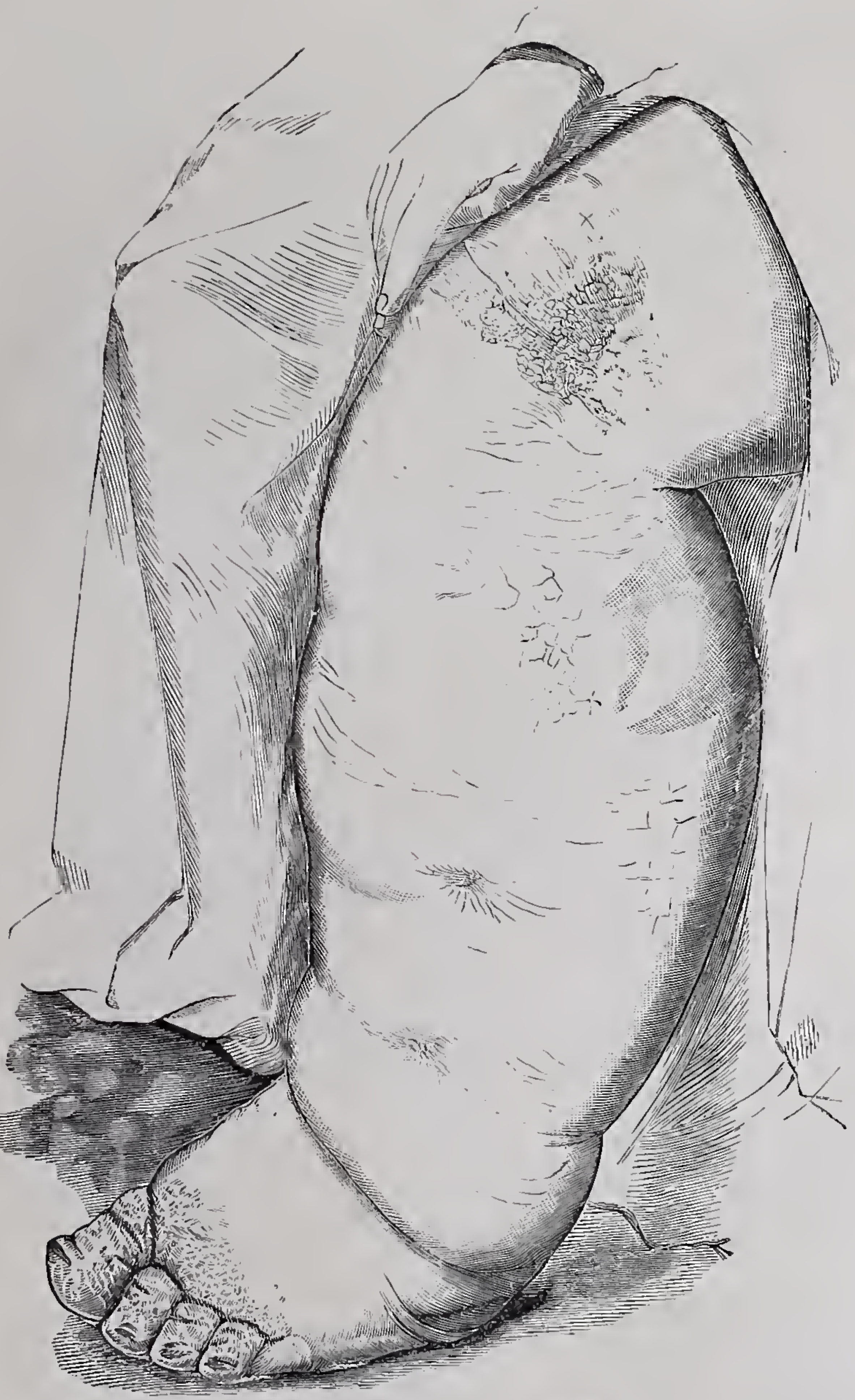

Fig. 22.—Left Leg before Treatment.

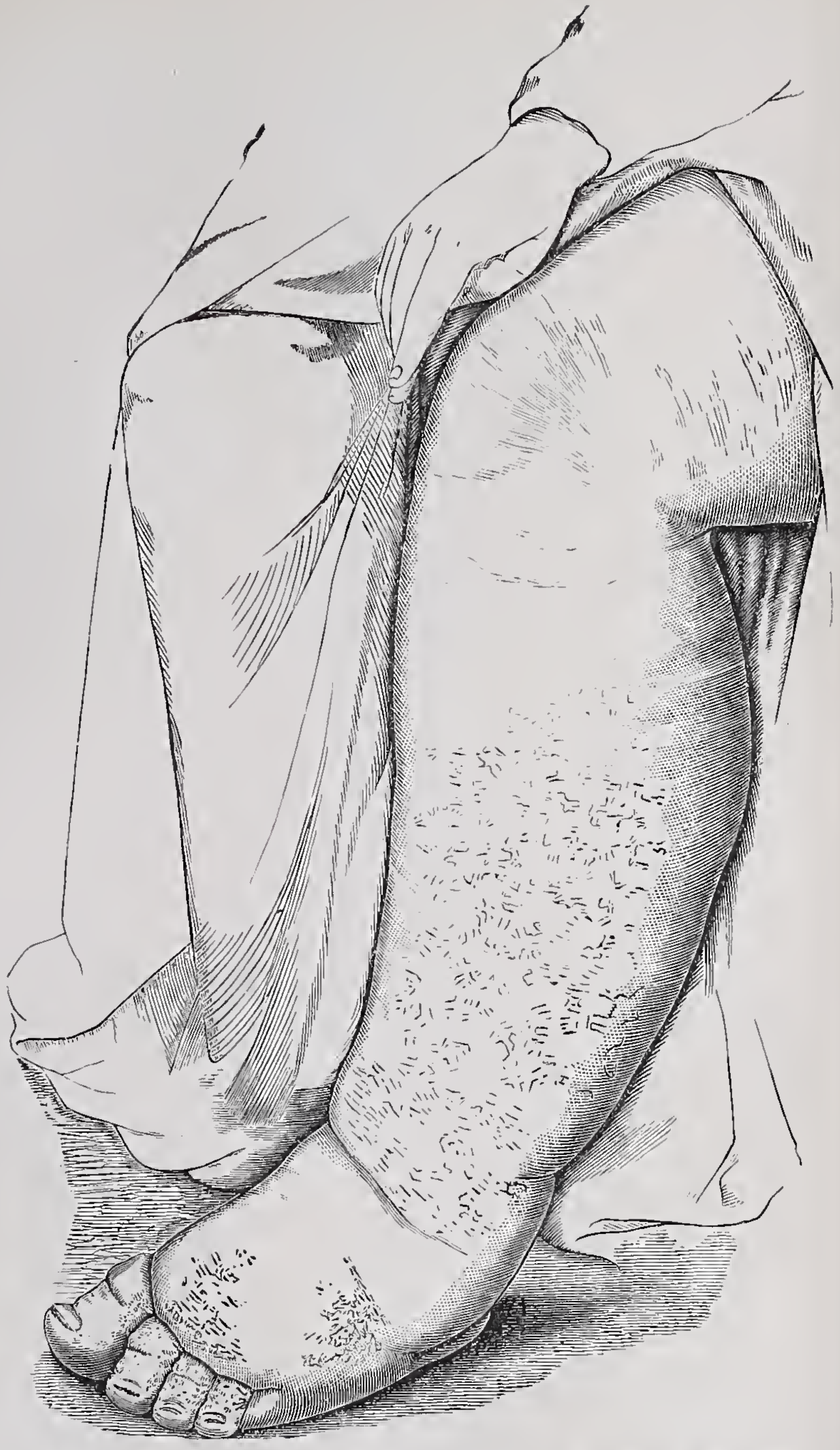

Fig. 23.—Left Leg five months after Ligature of the External Iliac Artery.

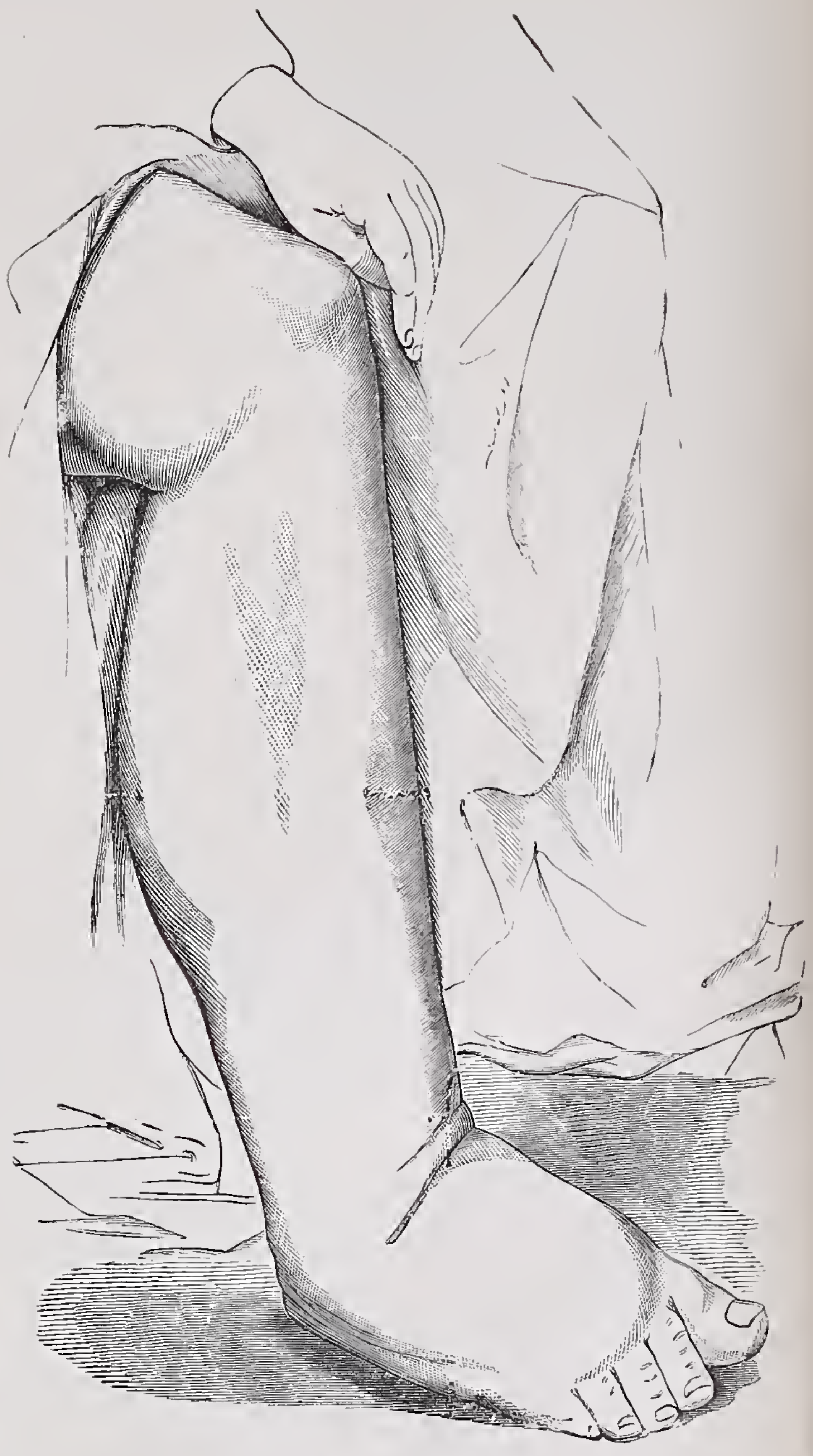

Fig. 24.—Right Leg.

Finally, desquamation set in, the scales being about a quarter of an inch in diameter. Most of the other attacks of inflammation were much more severe, and some of them implicated the thigh as well as the leg.

"On admission the limb presented the appearance delineated in Fig. 22. It will be observed that the parts are not only enormously enlarged, but also extremely misshapen. Deep sulci are seen on the flexor surfaces of the joints, especially at the ankle-joint, where the sulcus was two inches in depth. On the front of the knee, along the edges of the sole, and, most markedly of all, upon the dorsal surfaces of the toes, the skin bore a close resemblance to that of a patient labouring under ichthyosis—an appearance which at an earlier period of the disease was more extensively diffused over the leg. The rest of the skin had a very coarse appearance, the natural markings of the surface being greatly exaggerated. To such an extent was the skin hypertrophied, that at no part could it be pinched up between the finger and thumb, and no bone could be felt, except at the bottom of the sulcus, at the ankle-joint, the skin lining which was smooth, and not much thickened. The limb measured—round the ankle, 21⅛ in.; calf, 26⅞ in.; and thigh, 23 in.

"As may be inferred from the above, the hypertrophy of the thigh was not carried to nearly the same extent as that of the leg; and indeed, the skin on the internal and posterior aspect of the former was nearly normal.

"The appearance of the right leg, which is delineated in Fig. 24, is of great interest, as showing the appearance of the disease in its early stage. It had only been once attacked by inflammation, which did not extend above the knee. It measured—round the ankle, 13 in.; calf, 16⅛ in.; thigh, 19½ in.

"With the exception of the disease of the lower extremities, the patient seemed to be in perfect health in every respect, and neither she nor her parents had ever resided in foreign parts.

"In the year 1863 she was under the care of the late Dr. Lyon, and at that time under the influence of rest and careful bandaging, the progress of the disease appears to have been temporarily arrested.

"When she came under Dr. Anderson's care she seemed to improve considerably under the use of small doses of Fowler's solution, combined with rest and the use of a flannel bandage; for she thought that the affected parts were considerably softer, and on the 10th September, 1866, the left limb measured—round the ankle, 17⅜ in.; calf, 26 in.; and thigh, 23 in.

"From this time no improvement took place in the size or appearance of the affected parts, so that he recommended her to the care of

Professor George Buchanan, with the view of having a ligature placed round the left external iliac artery.

"The operation was performed by Dr. Buchanan on December 21.

"On the 22nd—the day following the operation—the parts were flabbier than before, and on the 25th they were so soft that the upper part of the tabia could be felt for the first time. The measurement of the limb on this day gave the following result:—Round the ankle, 16½ in.; calf, 21½ in.; thigh, 22½ in.

"On the 3rd of January, 1867—thirteen days after the operation—the ligatures came away while the dressings were being removed, after which the discharge diminished, granulations sprang up, and the wound had completely healed three months after the operation was performed.

"She was dismissed on April 30, 1867.

"On the 17th of May, 1867, Dr. Anderson had the opportunity of examining the limb. It was very greatly reduced in size, though it still retained, to a considerable extent, its distorted shape, as may be seen from the accompanying woodcut (see Fig. 23). The most remarkable improvement, however, consisted in the fact that the abnormal firmness and inelastic character of the skin had given place to a softness and elasticity which was all but normal, and the patient said that the leg was very much lighter than before, and that she could walk with greater ease. The measurements on this day gave the following result:—Round the ankle, 15 in.; calf, 17 in.; and thigh 21 in.

"The results of the treatment which was adopted in this case can be seen at a glance by placing together all the measurements, as follows:—

	Round the Ankle.	Round the Calf.	Round the Thigh.
	In.	In.	In.
June 22, 1866.—On admission at the Hospital for Skin Diseases, Glasgow, ...	21⅛	26⅞	23
Sept. 10, 1866.—After a course of arsenical treatment, bandaging, and comparative rest, ...	17⅜	26	23
Dec. 25, 1866.—Four days after ligature of the external artery, . . .	16½	21½	22½
May 17, 1867.—After her dismissal from the Glasgow Royal Infirmary, .	15	17	21

"In the forty-ninth volume of the *Medico-Chirurgical Transactions* (for 1886, p. 175), a case very similar to the above, and which was likewise treated successfully by means of ligature of the external iliac artery, is narrated by Mr. Bryant. In this case, as in Dr. Anderson's, neither the patient (who was twenty-five years of age) nor her parents had ever resided abroad; and, with the exception of the elephantiasis, she had always enjoyed good health. In her case, however, the disease was entirely confined to the left limb, and was unattended by inflammation: in Dr. Anderson's it implicated both limbs; the right exhibiting the earliest, the left the most advanced stage of the complaint. As may be seen from the accompanying woodcut, the leg, in the early stage, had the appearance of being œdematous, but there was not a vestige of pitting upon pressure. The progressive hypertrophy of the parts was evidently induced, too, by well-defined attacks of inflammation of the skin, the right leg having only once been the seat of inflammation; the left about a dozen times.

"In Mr. Bryant's case the left leg measured round the calf 22½ in. before the operation, and five and a half months after it, 15½ in.; there being a diminution of 7 in. in the circumference of the calf as the result of the operation. In Dr. Anderson's the left leg measured round the calf 26 in. before the operation, and rather more than five and a half months after it, 17 in.; there being a diminution of 9 in. in the circumference of the calf as the result of the operation."

For further particulars as to Mr. Bryant's case, and for an abstract of cases published by Dr. Carnochan, of New York, and others, reference may be made to the article in the *Medico-Chirurgical Transactions.*

Large scrotal tumours have, in recent years, frequently been removed by surgeons in India, China, and elsewhere, with complete success and comparatively small mortality. While in Samoa I performed 136 of these operations, the tumours ranging from 7 to 80 lbs. in weight, with only two fatal results.

The method which should be adopted may briefly be described as follows:—The patient should be placed on the operating table at least half an hour before the operation, and lie with the tumour raised considerably above the level of the body, that it may empty itself of blood as much as possible. A brass or iron clamp, with parallel bars and screws at each end, is then adjusted to the pedicle, and, after the anæsthetic has been administered, screwed rapidly tight. An Esmarch's band may be used in place of the clamp, but it is objectionable as it draws the skin into folds and renders the operation much more difficult. After the clamp is fixed a short flap is cut from behind, the tumour being held up for the purpose, then two or three skin flaps are raised from the anterior surface (where the penis requires a new covering), and the penis and testicles dissected out. A very few strokes of the knife will sever the remaining tissues, and the mass is removed. The vessels are then tied, twenty or thirty ligatures being necessary in the case of large tumours; the clamp is removed, the flaps brought together, and a drainage tube put in. The wound usually heals very rapidly. A detailed account of these operations will be found in the *Glasgow Medical Journal* for June, 1882. The practice of forming flaps of skin for covering the wound has been objected to by Sir Joseph Fayrer as "unnecessary, and almost certain to be the seat of recurrence of the disease." He directs that the penis and testicles be left bare, and says, "in from two to four months all is closed in by cicatrix tissue, which gradually perfects itself, and is not liable to become the seat of recurrence of the disease." But in the great majority of cases it will be found that the skin covering the pedicle of the tumour is healthy. Surely it is not contended that the state of the skin is the exciting cause of the disease; and why the preserving of a few inches of it, more or less, should increase the danger of recurrence, I fail to understand. Besides, if it be possible to cover up the necessarily large wound by skin flaps, its more rapid healing is ensured, and the dangers of evil results greatly lessened.

LYMPH SCROTUM AND THE FILARIA SANGUINIS HOMINIS.

By G. A. Turner, M.D.

Syn.—*Varix lymphaticus—Nœvoid elephantiasis—Milky exudation of the scrotum.*

This peculiar affection was first brought under the notice of the profession by Dr. Wong, of Canton, in 1858, and by Dr. Vandyke Carter in 1861. It has more recently been specially investigated by several observers, notably by Dr. Patrick Manson, late of Amoy, and has excited much attention. The disease has been thus described by Dr. Manson:—"The characteristic feature of lymph scrotum is the presence on the surface of the scrotum of vesicles and dilated lymphatics, which, when they rupture spontaneously or are pricked, discharge coagulable lymph. The number and size of the vesicles differ, and the quantity and physical characters of the fluid vary. In every instance the fluid coagulates rapidly and spontaneously, the coagulum contracting rapidly, so that after a day or two it may have nearly or entirely disappeared. A dark coloured sediment falls; the surface is covered with a white greasy pellicle; the sediment contains corpuscles like those of lymph and blood, and generally the embryo filariæ sanguinis hominis.

"In lymph scrotum the inguinal and femoral glands are much enlarged, soft, doughy, and varicose. A notable and characteristic feature of the disease, as it is of ordinary elephantiasis, is the frequent occurrence of an erysipelatoid inflammation of the affected parts, accompanied by a specific fever called elephantoid fever. This fever is ushered in with severe rigor, and is thus often called ague; the hot stage is prolonged and may be associated with delirium; after a day or two it ends in diaphoresis, and not uncommonly an escape of lymph from the scrotum. There is no regularity in the recurrence of the attacks of scrotal inflammation and fever. Very often an abscess forms in the affected tissue; and, until the pus escapes, attacks of inflammation are of frequent occurrence. Often it is an attack of scrotal inflammation and fever that first calls the attention of the patient to his disease. These attacks are readily induced by exposure to cold, by the friction of the thighs against the scrotum in walking, by slight injury, and by alcoholic and other excesses."

Lymph scrotum is met with chiefly in certain malarious districts of India and China, and Dr. Manson considers that it is "most intimately associated with chyluria on the one hand and ordinary elephantiasis on the other; so that the three diseases and their varieties may be considered as but accidental modifications of the same pathological conditions, and ætiologically identical." In opposition to this view may be stated the facts that in certain countries, as in Samoa, where elephantiasis prevails very extensively, lymph scrotum is unknown; that the scrotum in this disease is distended by lymph rather than hypertrophied, and collapses when excised; and that in elephantiasis there is nothing like the enlargement of the inguinal glands which is associated with lymph scrotum. The name *filaria sanguinis hominis* was given by Lewis to an embryo nematode which he discovered in blood in 1872, and which had previously been found in chylous urine by Wucherer in 1866. The parent worm was discovered in 1876 by Bancroft in Australia, and, independently, in 1877 by Lewis in India. It has since been discovered in Brazil by Aranjo and dos Santos, and in China by Manson. Cobbold named it filaria Bancrofti, after its first discoverer, but both the adult and embryo forms are usually referred to under the original designation, filaria sanguinis hominis.

The sexes of the filaria are distinct. Only a portion of a male worm has as yet been discovered, and as in this case it and a female were found together in a dilated lymphatic vessel, it is supposed that they live together. Dr. Manson describes the female as "a long slender hair-like animal, quite 3 in. in length, but only $\frac{1}{100}$ in. in breadth, of an opaline appearance, looking as it lies in the tissues like a delicate thread of cat gut, animated and wriggling." The vagina opens about $\frac{1}{25}$ in. from the head and behind it is found the uterus, with two horns, which run backwards nearly to the tail, and are stuffed with ova. The worm is believed to live for years in the same position, where it gives birth almost continuously to large numbers of embryoes. These have been seen by Manson escaping from the vagina, fully formed, just as they are found in the blood. As the embryo nears the vaginal end of the uterine horns it gradually separates the poles of the ovum; and, before it emerges from the vagina, it has extended them so far that the original round or oval sac has become converted into a sheath closely applied to the body, the superfluous covering dangling from the head or tail. The mature embryo, as seen in the blood and lymph, measures about $\frac{1}{90}$ in. in length and $\frac{1}{3500}$ in. in thickness. It is perfectly transparent and apparently structureless, "a long, slender, snake-like, gracefully-shaped animal," possessed of very great activity. As it is no broader than a blood corpuscle it has no difficulty, after being discharged into the lymph stream, in traversing the lymphatic vessels and glands with the lymph till it finds itself in the thoracic duct, and finally in the blood itself. In the blood they undergo no development, and are probably but short-lived, so that the parent worms may occupy a lymphatic for years, and may give birth to countless numbers of filariæ without interfering much with the comfort or health of the host.

For the further development of the filaria an intermediate host is required, and this has been ascertained to be the female of a particular species of mosquito. About two hours after sunset this mosquito goes in search of blood, and in drawing blood from a filaria-infested subject, the filariæ, along with the blood, are sucked into its stomach. There they have been found in even larger numbers proportionately than in the blood of the person from whom they were taken. Of the large number of filariæ ingested, by far the greater number die and are digested, or are expelled in the fæces, but a few undergo a singular metamorphosis. The sac disappears, the body becomes broader and shorter, and is filled with a fluid containing granular matter and exhibiting to-and-fro movements. The little animal passes through various further stages of development, the whole period occupying from four to six days. At this period the mosquito dies, probably falling into the water on which her eggs were laid, and the parasite is liberated. Manson says, "It now possesses an alimentary canal; its head is armed with a boring apparatus, and it has sufficient strength and activity to wield this efficiently. It is also in the medium most likely to afford it an opportunity of gaining access to its final host. What more probable than that boring its way through the dead and sodden body of the insect, if it has not already escaped with the ova, it finds itself in the water, where it will remain for a longer or shorter time, perhaps to be captured by some animal in search of food, or haply to be swallowed by man himself? Once in the human stomach it soon bores its way into the thoracic duct or some lymphatic vessel; and working up stream, in obedience to strange instinct, pierces the lymphatic glands and finally arrives at its permanent abode in some distant lymphatic vessel. Here it is followed by one of the opposite sex obedient to sexual instinct. The couple grow, and for years live together and breed, the progeny passing along the vessels through the glands and into the blood, there to await their chance of a friendly mosquito to help them, as it had their parents, towards maturity."

There is one very remarkable feature in the life of the filariæ which is that, unless in exceptional circumstances, they are during the day absent from the blood. They invariably begin to appear in the circulation at sunset; their numbers gradually increase till about midnight when they are so numerous that as many as a hundred may be counted in a single drop of blood; during the early morning their numbers become fewer, and by nine or ten o'clock they entirely disappear. This regular rhythm, to which Cobbold has given the appropriate name of *filarial periodicity*, is interrupted by an attack of fever, or it may be changed by the person working at night and sleeping during the day. In this case the parasite is present in the blood during the day and absent at night. Various explanations have been given of filarial periodicity. It has been supposed by some that the embryoes die daily, a fresh swarm being produced each night. Manson, however, believes that they retire to some internal organ and there lie resting and waiting till sunset when they resume their activity. A mature embryo, as has been stated, is only $\frac{1}{3500}$ in. in breadth. The unextended ovum, however, measures $\frac{1}{500}$ in. by $\frac{1}{750}$ in., and it is stated that the female sometimes gives birth to ova instead of to living embryoes. The result is that the ova, being much thicker than the extended embryo, are unable to pass through the glands, and the vessels leading from the part where the parent worm is situated are plugged one after another till all are rendered impervious. The result of this plugging up of the vessels is, that the channels below the seat of obstruction become distended with accumulated lymph and subsequently rupture, allowing the lymph to escape. Dr. Manson believes that such diseases as lymph scrotum, chyluria, and elephantiasis are caused in this way, the locality of the parent determining the exact nature of the resulting disease.

FRAMBŒSIA.

By G. A. Turner, M.D.

Frambœsia (framboise, a raspberry), Yaws (African for raspberry), or Pian (mulberry), designated by Alibert, Mycosis Frambœsioides, was described by Haly Abbas in the tenth century.

This disease is common in Africa, the West Indies, some parts of America (in Peru it is called Verruga); Samoa, where it is called Lupani or Tona; and many other groups in the Pacific. It is said to have been introduced to the West Indies and America by African slaves.

Characteristics of the Disease.—The disease has been minutely described by Dr. Gavin Milroy, Dr. Imray of Dominica, Dr. Bowerbank of Jamaica, and more recently by Dr. Alfred Nicholls, Superintendent of the Yaws Hospital, in the island of Dominica, who says :—" At first the eruption appears as small papules with a somewhat broadened base, usually no larger than a pin's head, and but slightly elevated above the surface of the skin. In a few days these papules enlarge, and the epidermis cracks upon the summit, disclosing a small, yellowish point, which has been likened to a globule of pus. The growth of the young tubercle necessitates the pushing aside of the superficial layers of the skin; and this is accomplished by the epidermis splitting in lines radiating from the central prominence, the resulting segments curling away before the rapidly-increasing yaw. The mature eruption consists of a number of yellow scabs elevated above the surface of the skin, flat or sometimes depressed at the top, and rounded off from the edges to the base. In size and shape the tubercles vary much. They may be as small as a split pea, or they may attain to so great a size as to occupy nearly the whole of the cheek with an encrusted mass half an inch thick. Their shape is rarely irregular, a circular form being the most common; and next in point of frequency are ovoid or reniform masses. Sometimes they are formed in a circle enclosing sound skin. At other times they form a ring round the mouth or anus; and in consequence of the great moisture in these situations, they do not become dark and dry as when they develop elsewhere. When in the anal fissure they are always moist; but when they exist round the mouth, or at the orifice of the nostrils, they are dry in some places and remain soft in others."

It is common to have the general eruption preceded by the formation of a single, large, projecting tubercle. This is called the "Mother Yaw;" or in the French, *Patois,* "Maman Pian." By the Samoans it is called the "ta'i" or "leader."

The typical yaw is about the size of a small raspberry, round or oval, pinkish or yellowish in colour, and firm in consistence. After attaining a certain size it gives out a thin ichor. Later on it begins to shrink; the discharge ceases; a yellow scab forms, which darkens as it becomes dry, and ultimately drops off. Sometimes two or more yaws coalesce, and they may develop at the same time several of these confluent masses quite as large as the "mother yaw." Occasionally, when the crop of yaws disappears, the "mother yaw" or some of these larger masses remain behind, and, if neglected, they may assume the form of intractable ulcers.

Seat of the Eruption.—Yaws appear most frequently on the face, the neck, the upper and lower extremities, less extensively on the trunk, and seldom on the scalp. They very commonly form at the junction of the skin and mucous surfaces, as the anus, the nostrils, and the angles of the mouth, in which situation they are very obstinate.

Constitutional Symptoms.—At the onset of the disease, and even during its progress, there is usually very little constitutional disturbance; children play as usual, and adults follow their occupation. When, however, the disease does not properly develop in its early stages, the patient may become cachectic, the joints swell and become painful, an offensive effluvium is given off, unhealthy ulcerations may appear about the joints, and the patient may become permanently crippled.

Nature of the Disease.—Frambœsia has been considered by some to be merely a variety of syphilitic eruption. This view is undoubtedly wrong. Those who have carefully studied it in countries where it is endemic, are almost unanimously of opinion that it is a disease *sui generis*, and that it has no relation whatever to syphilis. In Samoa, syphilis was unknown up till at least 1880, while frambœsia has been endemic ever since the group was discovered. It is looked upon there very much as measles is in this country. Among the natives and half-castes every child is expected to take it. It is seldom seen among adults, owing, doubtless, to the fact of their having had it when young.

About thirty years ago frambœsia was, for the first time, introduced to Savage Island (about 400 miles S.S.E. of Samoa). It ran through the entire population, *all* were laid down with it, and great numbers died—its great virulence being doubtless due partly to its being a new disease, but mainly to the fact that so many being simultaneously ill there were none available to tend the sick. A like serious fatality has often been observed on the first introduction of measles to a savage race.

Communicability.—Yaws is generally conveyed by contact, or by absorption through some abraded surface, and it has been conjectured that it may be carried by flies. When one member of a family is affected, other cases generally follow in the family, or among those with whom they associate.

In certain parts of Africa it is common to expose children to the disease, that they may take it when young, just as children were formerly exposed to the infection of measles and scarlatina in this country.

It may be propagated by inoculation; and formerly inoculation was systematically practised by the negroes themselves for the purpose of escaping work on the plantations.

In Samoa I met with a case where yaws resulted from a wound received on one of his knuckles by an overseer on a plantation, who, while in the act of separating two natives who were fighting, was injured by the teeth of one of them who at the time was suffering from the disease. When inoculated, the wound, after a few days, inflames, and soon takes on the form of the "mother yaw" or "leader," the general eruption following after an interval of from seven to fifteen days.

It is commonly stated that the disease is almost solely confined to the coloured races. This is, however, probably owing to the fact that white men shun contact with such a loathsome disease. When it does affect a white person it seems to be more intractable than it is among negroes or Polynesians. As a general rule, one attack confers immunity. The period of incubation is said to be from three to ten weeks, and the average duration of an attack is from two to four months. In severe cases, especially among whites, it may last for months or even years. It is very rarely fatal.

Treatment.—On the East Coast of Africa the patient is taken to the sea shore, rubbed down with sand, and washed in the sea. In Samoa the same treatment is practised, with this addition—the yaws are scraped with a shell or piece of iron-hoop. The treatment is said to be effectual, but it is not enjoyed! In the West Indies, the natives apply the boiled and beaten up leaves of the physic nut, the juice of the bitter orange, sulphur, or powdered alum. Personal cleanliness is of primary importance, occasional aperients are also indicated, and the diet should be good, but not stimulating. As to medicinal treatment, mercury, in some form, gives the best results. For the "mother yaw," the ointment of the nitrate, or of the red iodide, of mercury, may be used with advantage, and for the constitutional affection a course of grey powder is most beneficial.

Iodide of potassium has also been tried with success.

MYCOSIS FUNGOIDES.

Syn.—*Granuloma fungoides* (Auspitz)—*Lymphodermia perniciosa* (Kaposi) —*Multiple fungoid papillomatous tumours* (Köbner).

We are specially indebted to the French School for most accurate descriptions of this disease, and to Alibert, who first described it and gave to it the name of mycosis fungoides (1835).

We know nothing with regard to its ætiology. Fortunately, it is a rare disease; it is neither contagious nor hereditary, is three times as frequent in males as in females, and generally occurs after the age of twenty-eight.

It may appear upon any part, but is most commonly met with on the trunk, face, and articular folds. It may begin in patches like those of erythema or urticaria (Kaposi), but generally they resemble those of eczema squamosum. They may be isolated or confluent, and vary in size from that of half-a-crown to that of the palm or larger. The surface is bright red, the seat of fine desquamation, and generally dry, although occasionally there is slight moisture which dries up into thin crusts. There is often intense itching, so much so that insomnia is common. This condition may last from months up to years, when some of the patches may disappear, while others extend circumferentially and coalesce with neighbouring ones, so that large surfaces may be involved; indeed, the eruption sometimes becomes generalised. Some of the patches have a tendency to become pale in the centre and to spread at the edges, forming rings of eruption. As the result of the scratching the skin becomes brownish (from deposit of pigment), and furuncles are common.

Sooner or later the disease penetrates more deeply, the patches become thickened, firm, and smooth, as the result of œdematous infiltration of the corium. Papules, and nodosities up to the size of a bean, of a brownish-red colour make their appearance, and are not limited to the eczematoid surfaces. Many of these disappear within a few weeks, leaving pigment stains or atrophic depressions, while new ones form. Others become depressed and atrophied in the centre, and spread at the periphery in circles from the size of a crown upwards.

Finally, on the eczematoid surfaces, or by a rapid increase in the size of existing nodosities, deep red, smooth, oval, or rounded tumours, even as large as an orange, appear, which are sessile or slightly pedunculated, and compared by Alibert to the fruit of the solanum lycopersicum. Many of these are attacked by ulceration, and become the seats of characteristic fungoid growths.

At this stage, which is often associated with lymphangitis, the itching disappears, the patient becomes increasingly emaciated and cachectic, and death closes the scene from exhaustion, or owing to complications, such as suppuration of the cellular tissue, diarrhœa, or pulmonary troubles.

Another variety of the disease has been described by Vidal and Brocq, in which there is no preliminary eczematoid stage, the nodules and growths making their appearance from the first. In this form they are not widely diffused, but are circumscribed and limited to one region. Its course is much more rapid than the other form, and it is even more certainly fatal.

Sections of the morbid tissues show that there is a round-celled infiltration of the corium, starting from the vessels, and imbedded in a delicate fibrous stroma, which destroys the capillaries and replaces the normal tissues of the skin. No characteristic micro-organisms are present, and internal organs are not involved, although the mucous membrane of the mouth, especially of the palate, may be implicated. Kaposi and other German investigators consider the disease to be of a sarcomatous nature, Ranvier and most French authorities class it with lymphadenoma, while Payne and others look upon it as a granuloma.

Diagnosis.—In the early eczematoid stage the disease may be, and often is, mistaken for *eczema*. The seats of predilection above mentioned are, however, different from those of eczema (see Art. on eczema), there is much less tendency to moisture, the edges of the patches are more abrupt, and, in the more advanced stages, the firm induration of the eruption is such that we do not encounter in eczema.

In the later stages it has been mistaken for *frambœsia*. But the latter is only met with in tropical climates, and is almost confined to the negro race; it is contagious and inoculable, is very common in children, even more so than in adults, and males and females are equally liable to it. There is no preliminary eczematoid stage, small nodules being the starting point of the disease; these gradually enlarge, the epidermis over them cracks and curls away, exposing tumours covered with thick yellow crusts, on removing which the growths resemble condylomata, or have a raspberry-like appearance. The disease is rare on the scalp and trunk, being oftenest on the face and extremities. It is a much less serious disease, and is rarely, if ever, fatal. Its duration does not generally exceed a few months if suitable treatment is adopted.

Prognosis and Treatment.—Mycosis fungoides is almost always fatal, although many years may elapse before the patient succumbs. In one or two cases arsenic in very full doses—especially by subcutaneous injection—has proved successful, and Bazin has reported a cure following upon an attack of erysipelas.

LEPROSY.

Syn.—*Lepra Arabum, Elephantiasis Græcorum, Aussatz, Spedalskhed.*

By James Christie, A.M., M.D.

Leprosy is a disease of very ancient date, and of wide geographical diffusion.

Much confusion has existed from the nomenclature of the disease, as the lepra of the Arabs and the elephantiasis of the Greeks are different from the lepra of the Greeks, and the elephantiasis of the Arabs; while the term lepra has been generally adopted in modern treatises on the disease, though in England, the designation, lepra, is applied (after Willan) to an entirely different skin disease (see p. 377).

History and Geographical Distribution.—Leprosy is known to have been endemic in Egypt from the earliest historical times (4200 B.C.), as also in India and China; and it was evidently prevalent among the Hebrews when they migrated from the delta and valley of the Nile.

Two distinct diseases, however, seem to have been comprehended by the Hebrews under the generic designation, leprosy, the one true leprosy, and the other some comparatively trivial skin disease, curable within a short time.

Lucretius speaks of Egypt as the endemic seat of leprosy; Herodotus describes it as existing in Persia; while the earliest Greek and Latin authors refer to it as a foreign disease.

In the first century, B.C., leprosy gained a footing in Greece and Italy, and it was said to have been introduced by the army of Pompey on its return from Syria, B.C. 62. Soon afterwards, the disease was disseminated by the Roman armies in the colonies of Spain, Gaul, and Britain, its geographical range being co-extensive with that of the Roman Empire.

The next great and widespread diffusion throughout Western Europe occurred through the movements of the crusaders, so that it became the most important disease of mediæval Christendom, great numbers of the population being attacked, including families of the highest rank, and even members of Royal Houses.

So early as the seventh century, leper houses, for the isolation of the diseased, were established on the Continent of Europe. In England, leper hospitals were established at St. Giles, London, in 1101, and at York, in 1110; and from that time till 1472, a hundred and twelve hospitals existed throughout the country. In Scotland leper hospitals were founded in Elgin, in 1226; at Aldcambus, Gorbals of Glasgow, in 1350; and at Greenside, Edinburgh, in 1589.

In the fifteenth century, the disease began to decline in Italy; and, in the seventeenth, it had become comparatively rare. It lingered on in the Shetland Islands till about 1742, and the last known leper in Scotland died there in 1798.

When leper houses were established in the seventh century, laws were enacted by Rother, King of Lombardy, regarding the marriage of lepers; and similar enactments were afterwards made by Charlemagne. During the middle ages especially there was intense dread of the disease, so that the isolation of lepers was strictly enforced by law, and backed up by popular sentiment. The occupants of the leper-houses had to wear a special costume, usually a long, grey gown with a hood drawn over the face; and they carried a wooden clapper to give warning of their approach. They were not allowed to enter churches, inns, mills, or bakehouses, nor to touch healthy persons nor eat with them. Neither were they permitted to wash in the streams, nor to walk in narrow footpaths. At Greenside, Edinburgh, they were not allowed to leave the hospital under pain of death; and a leper woman quick with child was burned alive.

Leprosy is still common all over the East, and there are leper villages in China, Japan, Persia, and Crete; but, in India, lepers are not usually isolated. The disease is also common in Africa, more especially along the coast, east and west; and among the inhabitants of the neighbouring islands, Madagascar, Mauritius, Bourbon, St. Helena, Madeira, Canaries, and Azores. It is prevalent in the West Indies, Mexico, Brazil, Central America, and especially in the Hawaiian Islands. In Norway, more especially in the district of Bergen, it has been estimated that there is one leper to every 833 persons; and, within historic times, leprosy seems to have infested the same maritime area as at present. Sporadic cases, occurring in England and France, are generally in persons who have been born, or who have lived in the East or West Indies, Mauritius, or Bourbon, or other countries where the disease is endemic.

Ætiology.—Leprosy has, at some time or other, been universally regarded as an infectious or contagious disease; and, in consequence, the leper has been exiled from society. It has also been regarded as a markedly hereditary disease, so that, even now, there is the strongest repugnance to marriage into a family where leprosy is known to exist. From what we know regarding its recent appearance in certain localities, there is every reason to conclude that it does not originate *de novo;* but is introduced from without, and is disseminated by contagion or infection. Regarding its appearance in the Sandwich Islands, Dr. Hillebrand says:—"Leprosy was unknown before 1859, and, after a close scrutiny, cannot be traced further back than the year 1852, or, at the most, 1848. Soon after the character of the disease became known, the natives began to call it "the Chinese disease." He was not able to ascertain whether this was from a belief that the disease had been imported through Chinamen, of whom there had been a considerable number settled in the island for years, or simply because the Chinamen had told them that the disease was common in China. The person supposed to have introduced the disease was unknown; but we have the fact of the appearance of leprosy among a previously healthy people some time after they had first come into contact with the Chinese, a people among whom the disease was common. It is not at all singular that the individual who introduced the disease could not be traced, as the time of contact must have been many years previously; but we cannot resist the conclusion that it was conveyed by human intercourse between two distinct races. This conclusion is also supported by the fact that the second six cases appeared in the immediate neighbourhood of the first case seen. In 1859, only a few were known; but, in 1865, there were, according to a Government census, 230 lepers among 67,000 natives, showing that the disease had been widely disseminated from the first cases.

Climate, poverty, and mal-hygiene have been ascribed by various authors as causes of leprosy; but such conditions can only be stated as predisposing causes, or as conditions favouring its spread amongst a community into which it had been introduced. So also in regard to heredity, the most that can be said being, that a hereditary predisposition may possibly exist, though the actual cases occurring in families may be as well, if not better, explained by the theory of communicability.

In support of the theory of communicability, it may be stated that leprosy, in all cases in which its history can be investigated, has been found to have spread wherever an infected people has been brought into contact, under favourable circumstances, with a previously healthy population; that it always has been most prevalent among communities where the first communication with lepers was allowed, and where insanitary conditions were habitually disregarded; and that this theory of communicability adequately accounts for the extension of the disease from person to person; and, consequently, from one community or nation, to another. Recently there have been published several cases in which leprosy had evidently been communicated to Europeans by contagion, in one by vaccination, and Dr. Arning at Hawaii, has succeeded in inoculating a condemned criminal. In this case the period of incubation was very long. The prolonged stage of incubation, in some cases, probably extending over many months, makes it often very difficult to trace the origin of the contagion.

Some of the older writers on the disease, who had not the means of scientific investigation which we now possess, claimed it as a parasitic disease, in the gross sense of the term; but recent observers have found innumerable minute bacillus-rods within the cells of new leprous tubercles. Whether these micro-organisms be the efficient cause of the disease, or merely pathological products, has not yet been definitely determined, though the evidence seems to indicate that they are necessarily associated with its propagation from man to man.

Symptoms.—Whatever theory may be adopted as to the ætiology of the disease, it is evident that, when the system has been invaded, leprosy appears as a constitutional disease marked, externally, by the deposition of a peculiar albuminous substance in the skin, appearing as discoloured patches and nodules, affecting also mucous membranes, and other surface tissues, and deeply implicating the structure and function of the nerve centres and the peripheral nervous system.

In accordance with these well-marked characteristics, leprosy has been divided into two forms—viz., *tubercular* and *anæsthetic*, the former being that which has, as its most prominent features, discoloured patches and nodules on the epithelial surfaces of the body, external and internal; the latter that in which the depositions involve the nerve centres and peripheral nerves. Under these general divisions, there are several subdivisions depending on peculiarities of form and anatomical distribution.

Leprosy has a prodromal stage which is somewhat uncertain, both in character and duration. There is usually a well-marked and continuously increasing departure from the normal standard of health, which may be extended over many months, ushered in by more or less pyrexia and dyspeptic symptoms, a sensation of overpowering drowsiness, disinclination for exertion, vertigo occasionally accompanied with epistaxis, and profuse perspiration. The body temperature is increased, being sometimes so high as 103° F., the rise of temperature being frequently associated with a persistent sensation of cold. The tongue is red, and indented at the edges; there is a prickling sensation on the face; and, after a variable interval, the skin becomes tense and shining, usually commencing in the lobes of the ears, and extending to the sides of the face and nose. The prodromal symptoms are generally intermittent, there being periods of rest and exacerbation.

This condition is followed by the "periodically eruptive stage," during which successive outbreaks of the eruption, in the form of blotches on the skin, come and go before tubercles make their appearance. Eventually, however, these erythematous congestions, which evidently depend on fresh deposits of leprous material, leave either tubercular nodules or permanent spots, which are often devoid of sensation, the disease diverging into either of the two varieties, *tubercular* or *anæsthetic*, to which may be added *mixed* leprosy, the special symptoms of which we may now describe.

Tuberculated Leprosy.—In this form of the disease, the macula appears first as a red or reddish-brown spot, deeper coloured in the centre than at the circumference. It is slightly elevated, and varies in size and form, being circular or oval in shape, and terminating abruptly in sound skin. In the early stage, the macula is hyperæsthetic; and, in white or fair persons, it resembles tinea versicolor. On the subsidence of the eruption, tubercles appear on the site of the patches or elsewhere; or the skin may be extensively implicated in the form of large tubercular masses which enlarge peripherally. When the tubercles are fully formed, the reddish colour is replaced by a brown, thickened condition of the integument, and the hyperæsthesia is succeeded by anæsthesia. The tubercles may remain stationary for a time, or they may be absorbed, resulting in atrophy, ulceration, or suppuration, leaving a white cicatrix, resembling the vaccine cicatrix.

Instead, however, of the formation of tubercles, the patch may become thicker and more elevated; and neighbouring patches may coalesce, forming one large mass, presenting more the appearance of an abnormal and irregular thickening of the entire skin, particularly over the face and abdomen.

Tubercles are most frequently developed on the head, face, ears, nose, the extremities, the mammary gland and nipple, the scrotum, the prepuce, around the anus and vagina, or on the conjunctiva and cornea, and in the mouth and throat. They are seldom, or never, seen on the hairy scalp, or the glans penis; and but rarely on the elbow or knee-joint, the back of the neck, the soles of the feet or the palms of the hands. In advanced cases, more especially among coloured races, there is often a peculiar mottling of the entire skin.

There is but little pain or uneasiness accompanying this stage of the disease, though there is, sometimes, considerable pruritus. The aspect of the face, however, is very much changed, and there is a peculiar anxious expression due to distortion of the features. In some cases, the countenance assumes an aspect of extreme ferocity or brutality, and the expression is permanent (Leontiasis Satyriasis); the heavy frowning eyebrows, the protruding and everted lips, the pendulous ears, and the hoarse sepulchral voice, rendering the patient an object of terror and loathing.

The tubercles, owing to lowered vitality, are extremely apt to ulcerate from slight external causes, such as exposure to the weather, trivial injuries, and personal uncleanliness; and, when suppuration takes place, the odour of the patient is extremely offensive. Ulceration most frequently commences at the tips of the ears, then at the toes and fingers, the nose and other portions of the body; and it often terminates in necrosis, the fingers and toes dropping off joint by joint, leaving a well-healed stump (L. mutilans). It is a remarkable feature of the disease, that ulceration and sloughing may take place with but very little pain, or even without complaint of pain, though, in some cases, the pain is very severe, more especially at night. In addition, the external group of lymphatics enlarge, and the viscera become implicated. The whole system becomes involved, digestion being impaired, the circulation lowered, and nervous energy decreased. Extreme emaciation generally precedes death.

In about nine years, the disease reaches its climax, unless some complication has brought about an earlier fatal termination; but, in general, the whole system is poisoned, and the patient presents an aspect the most loathsome that can be imagined. The following case which was under Professor M'Call Anderson's care is a good illustration of this variety:—

J. W., æt. 25, coal dealer, was admitted to the Western Infirmary of Glasgow, 4th February, 1885, complaining of a tubercular eruption of the face, arms, and legs of nine years', and of aphonia of one year's duration.

The family history, so far as known, was satisfactory.

The patient was born and brought up in India, where his present illness began. He had dysentery about eleven years ago, which lasted for two months. Immediately after he had recovered from it, he began to suffer from swelling of his whole body, especially marked in the upper and lower limbs and in the face, which he attributed to drinking bad water. It lasted for several weeks and then gradually subsided. In about two months after it had gone, he noticed that his face was becoming swollen and of a dark colour. Dark red or brownish spots soon appeared on a level with the rest of the surface, not at all distinct at first, but afterwards becoming intensely red and inflamed, especially on exposure to the sun. The cheeks, nose, lips, and lobes of the ears were especially involved. The eruption next appeared on the hands and then on the legs. It never showed itself on the trunk of the body either in front or behind. The eruption continued as dark patches on the skin for two years, when small lumps or tubercles, about the size of peas, made their appearance, which came out in successive crops ever since, and were painful for a day or two at first. They appeared on the face, then on the limbs, and were especially numerous on the insides of the thighs. These nodules have continued more or less ever since, occasionally becoming inflamed, but never suppurating.

He came to this country about seven years ago, and felt much improved by the change. He was in the Infirmary on a previous occasion from 17th May to 13th November, 1879. He was then treated by the internal administration of chaulmoogra oil, given at first in 6 minim doses three times a day, and gradually increased till, for the last two weeks of his stay in the Infirmary, the dose was 60 minims. On one or two occasions, however, before the maximum was reached, the medicine had to be discontinued, or the dose reduced, on account of sickness and want of appetite. During the last few weeks of his residence, 5 minims of ether were given with each dose, which seemed to make it agree better. On four occasions, during his stay in the Infirmary, fresh crops of tubercles appeared on his arms and legs, but the older ones became much less marked, and on dismissal he felt much better than he did on admission. He commenced business as a hawker of coals on the following March (1880), and felt comparatively well all summer, but when the winter came he was exposed to the cold and damp, and his face became a great deal worse, as it always did at that season.

On admission, there were patches on the upper and lower extremities, rounded in form, and varying from the size of a cherry to that of a walnut. These patches tended always to grow to a certain size, to remain stationary for an indefinite period, and then gradually to become less and disappear, leaving only a staining and slight thickening of the skin.

"The features are greatly distorted, the tissues being infiltrated and the natural lines on the surface much exaggerated. The skin of the forehead is thickened and corrugated, and the tissues above the eyelids projecting and hanging down so much as to interfere with vision, especially on the left side. The eyelashes and eyebrows are almost gone. The lips are enormously increased in size, and the superficial vessels distinctly visible. A year ago, he fell off a cart, his face striking the ground, and since then there has been on the forehead and nose a tendency to ulceration, which is covered over with dryish crusts. The eruption is also seen on the back of the neck, where there is a large crust a little to the right of the middle line. The skin of the head, though yellowish, is of normal colour, and that of the unaffected parts of the body of a dirty yellow tinge.

"On the arms the eruption is chiefly confined to the extensor surfaces, extending from the shoulders to the wrists, being macular over the shoulder, but elsewhere more tubercular in character. The hips, the front of the knees, and the posterior or flexor surfaces of the legs and feet are also involved. The toes are larger than formerly, but only within the last six months have the feet become swollen. The skin of the feet has a more or less white and silvery appearance. There is a tubercular condition of the scrotum and prepuce. About a year ago his voice became affected, and now he can hardly speak above a whisper; there is slight difficulty in swallowing; the eyes are inflamed, and there is a well-marked opacity over the left cornea. There is no defect of sensation. (See Fig. 25.)

"Since admission the treatment has been—Generous diet; tincture of quinine (ʒi) before, and a pill of arsenious acid (gr. $\frac{1}{30}$) after each meal; every second day a warm bath, in which 4 ounces of sulphuret of potassium is dissolved: and friction twice daily with equal parts of Gurjon oil and lime water.

"This treatment, continued for a couple of months, has been beneficial in so far as his general health is much improved, and the tubercular condition is distinctly less, though still pronounced; his voice too is a little stronger."

Non-Tuberculated or Anæsthetic Leprosy.—This form of the disease is distinguished by a morbid condition of the nerves, the result of a neoplasmic or other deposit in and outside their structures, and an eruption peculiar to it. The first symptoms experienced are pain and tenderness in various parts of the body, especially the skin, and shooting, lancinating pain, increased by pressure along the course of certain nerves, particularly the median, ulnar, and peroneal nerves. This is sometimes described as a burning sensation, or as a numb feeling; and there is a perceptible wasting of the muscles of the hand

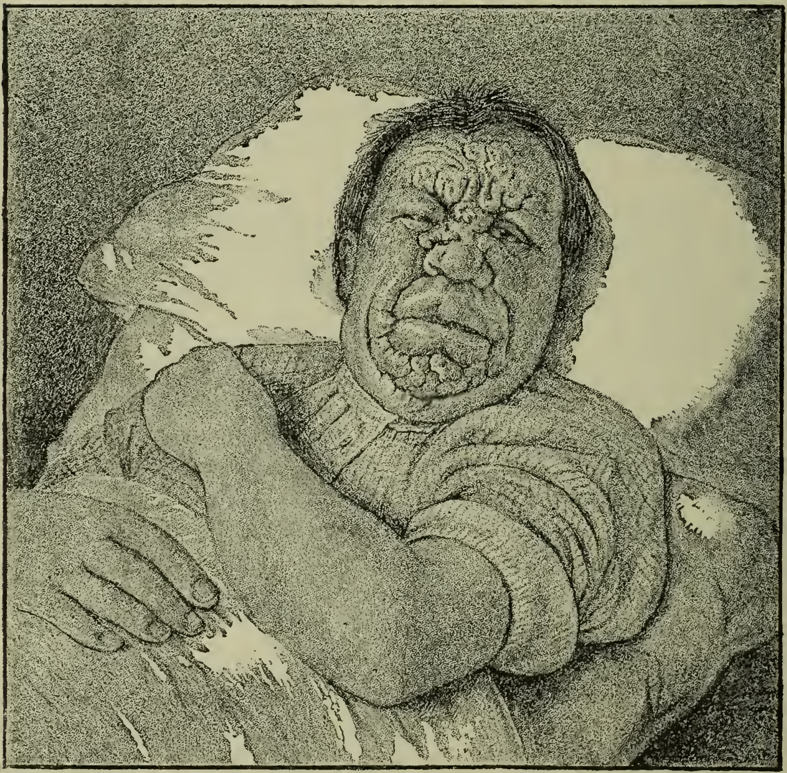

Fig. 25.

and foot. The patient cannot grasp so readily as formerly, and he lets things slip out of his hand. The ulnar nerve and the little finger are always the first to suffer. The great drowsiness characteristic of the early stage of tuberculated leprosy is entirely absent in the non-tuberculated or anæsthetic form.

These prodromata may last for twelve months or more, and they are followed by an eruption of spots or blotches. These spots vary in size from an inch to 2 inches in diameter, and are generally circular. At first they are not anæsthetic; but there is not the hyperæsthesia of the tuberculated spot. The spots vary in colour; and when the pigmentation deepens, the disease is termed *L. maculosa nigra;* but, when they become blanched, *L. maculosa alba*, or white leprosy.

The most frequent sites of pigmentation are the back, the shoulders, the posterior parts of the arms, the nates, thighs, and around the knees, the elbows, and the face. Sometimes the patches follow the course of a nerve, more particularly the musculo-spiral; but, in all cases, the nerve symptoms are prior to the eruptive stage. Anæsthesia is generally marked in the blanched spots, but it is not usually present until the patches commence to enlarge, in the second stage of the disease. In the second, or spreading, stage the spots enlarge, frequently with a serpiginous tendency; their edges are raised and studded with minute vesicles; they become anæsthetic; the hairs become white; the secretion of sweat is suspended; the skin has a dry wrinkled appearance, and there is abundant desquamation. It is worthy of note that spontaneous ulceration of the non-tuberculated spot never takes place.

These symptoms are followed by well-marked pathognomonic structural changes and mutilations. The skin being generally affected, the anæsthesia extends, the limbs, hands, and feet being devoid of sensation. Burns, or slight injuries, take on an unhealthy action followed by ulceration and necrosis, the anæsthesia of the surrounding parts being profound; but the patches bleed readily when an incision is made. The fingers become flexed; the nails clawed and talon-like; small bullæ (*pemphigus leprosus*) appear; then ulceration, necrosis, or interstitial absorption of bone, and the formation of the leper ulcer. Interstitial absorption of the phalanges is pathognomonic of this form of the disease. The hands or the feet become arched, and assume a distorted claw-like form, and may eventually drop off. Towards the termination of this stage, nearly the whole of the cutaneous surface is involved.

The last stage of the disease is usually reached in about ten years, the most marked symptom being, in addition to the lesions mentioned, muscular paralysis. The anæsthesia extends to the muscles of the legs and arms; the skin is light, glistening, and atrophied; a moist spreading gangrene or dry mummification supervenes, spontaneous amputations take place, and a sound stump may be left behind. The anæsthesia is so complete that the leper often removes the part with a knife or chisel, and the wound heals readily. Death usually results from extreme emaciation. A mixed form of tuberculated and non-tuberculated leprosy may occur in the same individual.

Diagnosis.—In the early stage, the tuberculated form may be confounded with syphilis, lupus, and elephantiasis Arabum. In syphilis, the patches on the face are rounder, and not elevated; they are scaly, larger, copper-coloured, and they never become anæsthetic after hyperæsthesia. Syphilitic tubercles are pitted; they have an areola, and a crust sometimes forms, but never in the tubercles of leprosy. In tuberculated leprosy, there is always infiltration somewhere. The tubercles in lupus are soft, vascular, and gelatinous; they are composed of immature cells which tend to migrate widely and deeply, and they undergo degeneration quickly. The tubercles of leprosy resemble more those of lupus than of syphilis, being rich in cells, but they do not soften and degenerate so rapidly. Their real seat is in the deepest part of the true skin; they are symmetrically disposed, are persistent, and never occur on the scalp. Elephantiasis Arabum, sometimes called Barbadoes leg, is more a local disease, attacking the lower limbs and scrotum, less frequently the upper limbs or the mammæ, but the face is never affected. In some cases, the skin is soft and velvety; but, in others, it is thickened, fissured, and covered with warty excrescences, or fungous suppurations, and there is always a constriction above the ankle.

Non-tuberculated leprosy may be confounded, at first sight, with leucoderma, morphœa, psoriasis, tinea versicolor, traumatic nerve lesions, and tropical ringworm; but, when the disease is fully established, a mistake is scarcely possible. The earlier symptoms are pain and tingling, with numbness along the ulnar nerve; and, when the characteristic eruption appears, there can be no doubt as to the nature of the disease. In leucoderma, the spots are always level; the functions of the skin are not interfered with, and there is never either hyperæsthesia or anæsthesia. Morphœa has been described as a relict of leprosy, but the disease, as now met with, has but a faint resemblance to anæsthetic leprosy. It is not preceded by nerve lesions, nor is its course at all analogous. The same remarks are applicable to psoriasis, pityriasis, and tropical ringworm, mistakes being possible only as the result of extreme carelessness. Traumatic nerve lesions could not be mistaken, for any length of time, for anæsthetic leprosy, though such lesions throw considerable light on the pathology of the disease.

Prognosis.—In both forms of the disease, the prognosis is always unfavourable, but more especially in the tuberculated form, which may be regarded as an almost necessarily fatal disease. The anæsthetic form is milder, and runs a much longer course than the tuberculated—nearly double; but it generally advances towards a fatal termination, the natural duration of the disease being about fifteen years. There may be periods during which the disease does not appear to make any progress; but there are also periods of exacerbation, and death from exhaustion ensues.

Morbid Anatomy and Pathology.—The pathology of leprosy, according to Virchow, is the production and effusion into the fibro-cellular structures of a "new granulation tissue," the difference between the two forms of the disease consisting in the fact that, in the tuberculated form, the deposit is in the skin and mucous membrane; while, in the non-tuberculated form, it is in and around the nerve tissues. Dr. G. A. Hansen, Assistant-Physician to the Leper Asylums, Bergen, Norway, writes:—"Whatever their seat, the formative elements of the tubercles are the same. If a preparation be taken from a young and still-growing nodule, recently extirpated, there will be seen chiefly round cells, the most part of the size of white blood-corpuscles—some with a distinct nucleus, others apparently without any, either quite clear or finely granular; and, when perfectly isolated, they may exhibit slight amœboid movements. Since the tubercles are well supplied with blood-vessels, these cells may possibly be supplied from them. It is very rare to see a round cell with two nuclei. Here and there, in the preparation, may be found pale, clear, flat cells, either spool-shaped or furnished with prolongations, and always presenting a distinct, single nucleus. In a teased-out preparation there may be seen, in addition, capillary vessels, sometimes dilated, and manifestly composed of cells. The tubercle at this stage is firm, and the round cells are not very loose; but, when a softer part is hit upon, the latter readily drop out, and they are now larger than white corpuscles, their form too becoming different. Thus, some have a bulged contour, others are branched, others oval or spool-shaped. The flattened, clear cells, named above, are also found, and some have multiple nuclei. Many cells have a granular centre or body, with clear branches; and rather large cells are sometimes seen, with or without prolongations, in which the nuclei are three- or four-parted."

More recent researches of Hansen and Neisser have shown that leprosy is associated with a micro-organism resembling the tubercle bacillus, the bacilli being always found in the granulation tissue forming the tumours, and in the round cells of the nodules. As already stated, these granulation tumours have their seat chiefly in the skin and mucous membrane, in the tuberculated form; and in the anæsthetic form, in the interstitial connective tissue of the nerve fibres, so that the nerve fibres are separated and compressed. Hence the anæsthesia and gangrene, resulting in the dropping off of the fingers and toes. Experiment has hitherto failed to produce the disease by inoculation, and it has been conjectured that the micro-organism has its origin in the decomposition of fish, as leprosy is chiefly present among fish-eating people. This hypothesis, however, is not borne out by facts, as the disease is not uncommon among people who never use fish as an article of diet.

At the request of Professor M'Call Anderson, Dr. J. Lindsay Steven examined a portion of one of the tubercles from the case of tubercular leprosy already referred to, with special reference to the leprosy bacillus, and has furnished him with the following report and remarks:—

"This organism is now well known, and has been carefully described by Hansen,* Neisser,† George Thin,‡ and others. The organism was easily discovered to be abundantly present in the tubercles in this case, and the following is a very brief note of the method pursued for its detection. The surface of a large, and not very old, tubercle on the left forearm was frozen with ice and salt, and then a small elliptical portion of the skin was excised. This was at once placed in absolute alcohol, in which it was kept for some days to harden. Sections were then made, and were stained according to the following methods:—The dyes employed to colour the bacilli were fuchsin in some sections, and gentian violet in others. The first sections were treated in precisely the same way as is employed when searching for tubercle bacilli in lung or other tissue. The others were investigated by what is now known as Gram's method,§ an account of which is given by Friedländer,|| and also in English by Woodhead.¶ This method is much to be recommended in the investigations of minute organisms, but space forbids further reference to it here. Some of the sections were also double-stained, the contrast dye being Bismarck brown, in order to

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* Bacillus Lepræ Von Dr. G. A. Hansen, in *Bergen*, *Virch. Arch.*, 1880. Bd. lxxix., p. 32. Also *Quarterly Journal of Microscopical Science*. New Series. Vol. xx. 1880.

† Weitere Beiträge zur Ætiologie der Lepra. Von Dr. Albert Neisser. *Virch. Arch.*, 1881. Bd. lxxxiv., p. 514.

‡ *Medico-Chirurgical Transactions*. Second Series. Vol. xlviii. London, 1883. p. 315.

§ *Fortschritt d. Med.*, 1884, p. 185.

|| *Microscopische Technik*. Von. Dr. Carl Friedländer. Zweite Auflage. Berlin: Theodore Fischer. 1884. p. 49.

¶ *Practical Pathology*. Second Edition. Edinburgh: Young J. Pentland. 1885. p. 515.

permit of a more easy study of the relationship of the tissue elements to the bacilli.

"An examination after treatment in either of these ways showed that the bacilli were present in the skin in simply enormous numbers, so much so as at first sight to suggest the idea that the swelling was probably in some measure due to the aggregation of the organisms. They were situated in the rounded masses of granulation tissue as well as in the more diffuse infiltrations of round cells. With the D of Zeiss they could easily be recognised as minute rod-shaped bodies, occurring either singly, or for the most part, perhaps, in rounded masses or bunches. It was at first somewhat difficult to determine whether the appearance of masses of bacilli was due to the organisms being situated within cells, or to their being simply grouped together in bunches. A more careful examination, especially after using Bismarck brown as a contrast stain, led to the conclusion that, for the most part, the appearance of rounded groups was due to their being situated in cells, a conclusion which agrees with the observations of most of the authorities who have investigated the subject. It should be noted, however, that the cells which contained the bacilli differed from the other cells of the leprous tissue in retaining the violet colour, and not being in the least affected by the Bismarck brown, which dyed the other cells of a rich reddish-brown tint. It struck me that this peculiarity might possibly be due to the effects of the products of the organisms on the cells. Thoma* has shown that the leprous elements spread by the lymph channels in the tissues, and in one or two of my specimens this was well seen, the minute spaces in the trabeculæ of connective tissue being filled with cells and bacilli.

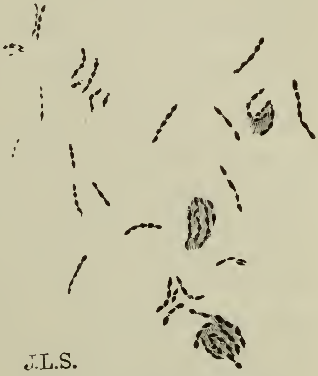

Fig. 26.—Leprosy Bacilli.

The illustration shows the individual organisms, and also the appearance they present when in groups or in the interior of cells. The spores are also shown. × 1,600.

"In order to study more particularly the appearances of the bacilli, they were subjected to examination by Zeiss' $\frac{1}{18}$ oil immersion lens, the system, by careful measurement, being found to magnify about 1,600 diameters. The bacilli were then seen to be fine minute rods of considerable length, occurring either singly or in bunches as already described (see Fig. 26). They were often sharply pointed at either extremity, and almost all of them contained small rounded spores, which varied considerably in size in some instances, the larger spores being in the centre. Ziegler in his text-book, quoting chiefly from Neisser, states that the bacilli may contain from two to three of these spores, but in more than one instance I found five, as may be seen in the woodcut. So far as I have yet had an opportunity of measuring the bacilli, my results agree with those recorded by other observers—viz., from four to six micro-millimetres (about $\frac{1}{5000}$ inch). I have been unable to make out that the rods are enveloped in a mucoid covering as has been described by Neisser. In the illustration, in addition to representing free bacilli, an attempt has also been made to show the appearance presented when the organisms were grouped into masses or in the interior of cells."

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* *Virch. Arch.*, Bd. lvii.

Treatment.—The treatment of leprosy has hitherto been attended with such unsatisfactory results that the disease is now regarded as hardly curable, treatment being merely palliative.* To cure the disease, the ancient kings of Egypt bathed in the blood of slaves; the Hindoos drank cows' urine; and, in Galen's time, the treatment consisted in keeping the skin soft and moist with oily applications, and in attention to personal hygiene. Danielssen, in 1850, treated the disease systematically, on the theory that it was due to an excess of albumen and fibrin in the blood, and he prescribed vegetable diet, steam baths, phosphoric acid, tartrate of antimony, iodide of potassium, chlorine, &c. In 1857 he tried the effect of syphilisation, on the hypothesis that the syphilitic poison might prove superior to that of leprosy, and thus neutralise the disease. A few years ago Dr. Beauperthuy's treatment of leper patients at Kaow Island attracted considerable attention. It consisted in rigid attention to all the ordinary hygienic rules; the internal administration of bichloride of mercury, in small doses; the external application of a liniment of balsam of copaiba; and, for the active removal of tubercles, a strong solution of nitrate of silver and copper, or the oil of cashew nut. The oil was applied with a sponge; and sometimes a needle dipped in the oil was used to puncture a tubercle to set up suppuration. The treatment was not successful.

In the Leper Hospital, Madras, and throughout India generally, the following remedies have been resorted to:—The Asiatic pill, a reported specific, containing asclepias in combination with arsenic; Fowler's solution, and the iodide of arsenic; Donovan's solution; hydrocotyle nigra; carbolic acid; phosphate of lime; Gurjon oil; and Chaulmoogra oil.

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* Unna has, however, reported a case which was cured by the internal administration of ichthyol, and the external use of pyrogallic acid (5 to 10 per cent.), chrysarobin (10 per cent.), resorcin (10 to 20 per cent.), and ichthyol (10 to 50 per cent.), in the shape of ointments, "salve and plaster mulls," applied separately to different portions of the affected surface. These "reduction remedies" he used on the principle that the leprous bacilli lived in oxygen, and that without a good supply of this they could not exist. The *New Syd. Soc. translation*, vol. cxliii. p. 50.

Chaulmoogra oil (the oil expressed from the seeds of Gynocardia odorata) has been employed in India with apparent success; and, according to Dr. Carter, under the prolonged and continuous use of the oil, the progress of the disease is arrested, the skin becomes soft and supple, the discolorations vanish, the different morbid sensations leave the patient, the mental hebetude passes away, the impaired sensibility is restored, the ulcers heal and cicatrise, though ever prone to break out again, and the general nutrition of the tissues is better, a marked improvement taking place in about two months. But even the prolonged use of the oil does not prevent the exacerbation of symptoms which comes on suddenly at intervals, its effect being manifested in arresting the progress of the disease and alleviating the symptoms, rather than by any specific action on the poison or poisonous matter itself. The oil may be administered internally, commencing with 10 minims in emulsion with milk; and externally as a liniment in the proportion of 1 to 15 of olive oil.

Gurjon oil (wood-oil from various species of dipterocarpus). This remedy was first brought prominently before the profession by Dr. Dougall of the Andamam Islands' Convict Establishment in 1875. "Gurjon ointment" is made by taking lime water, 3 parts; Gurjon oil, 1 part; mix and agitate them violently until they thoroughly unite. The compound for internal use is composed of equal parts of lime water and Gurjon oil; dose, half an ounce or more. The lepers were bathed every morning, using dry earth, well pulverised, as a detergent. The medicine was then given internally, and the ointment was rubbed in, over all the affected parts, for a couple of hours, the same treatment being repeated at 3 p.m. There has been a pretty general concensus of opinion, on the part of all who have given this remedy a fair trial, that the results have been better than those attained by any other mode of treatment; but Gurjon oil does not act as a specific, nor has any specific power ever been claimed for it. The ointment is not in any degree irritant, and it seems to be through its constitutional effects that the tubercles soften from within outwards. The emulsion, taken internally, acts as a laxative and diuretic.

Between the years 1868 and 1872, a good deal of attention was attracted by statements which appeared in various Indian newspapers, regarding professed "cures" of leprosy by Mr. Bhau Daji, a graduate of the Grant Medical College, Bombay. His method was kept strictly secret, owing, it is said, to his determination that the value of his remedy should be unmistakably proved before he made it public property. While engaged at this work in 1873, Bhau Daji had an attack of apoplexy. He never sufficiently recovered to be able to resume work, and he died in 1874. It was supposed that his secret had perished with him, but Mr. Stanley Boyd, in an article in the *British Journal of Dermatology* (July, 1893), states that he recently came into possession of certain papers of Bhau Daji, from the perusal of which, and from the information which he subsequently obtained from two or three patients of his, whom he has been able to find out, he concludes that he has sufficient evidence to justify him " in bringing Bhau Daji's remedy prominently forward, and in asking those who have the opportunity to give it a trial."

Mr. Boyd's investigations point to the conclusion "that Bhau Daji came ultimately to rely upon one substance—the oil of the hydrocarpus inebrians, known among the natives as kauti—which he used both for internal and external administration. Sometimes he coloured the oil to render it less easily recognisable. . . . In the early morning ♏x–ʒss of the oil was taken in boiled milk, and it is said to be 'not bad to the taste;' then the patient was rubbed all over with the oil; after two hours the oil was washed off in a warm bath. Sometimes the oil was directed to be applied again, and kept on until evening, when the patient wiped himself and went for a walk till he perspired; in other cases no oil was applied after the warm bath until evening, when it was again rubbed in over the whole body, and the patient slept in it. The oil was applied also to affected mucous surfaces; for example, it was to be run into the nasal cavities. The patients were ordered to abstain from pork, beef, and fish; from all alcoholic drinks, tea and coffee; they were allowed as much milk, fruit, and vegetables as they liked; also butter, eggs, mutton, and fowl."

It is said that no ill effects follow the treatment; irritation and vesication do not result; and the curative effects are best marked after one and a half to two months, when the swellings subside, redness lessens, tubercles soften, and ulcers heal.

AINHUM.

By James Christie, A.M., M.D.

Ainhum ("to saw"), Sukha pakla ("dry suppuration"), and Quigila (a South American designation) appear to be identical diseases. The disease is said to be of frequent occurrence among the African races, the Creoles of South America, and the natives of Eastern Bengal. It has been long known as existing among the Africans and the Creoles in South America, and has been described by Dr. Silva, of Lima, in

1867; by Dr. Seixas, of Bahia; and by Drs. Collas, Wise, and Crombie, of India.

Dr. Crombie describes the disease as follows:—"It seems to be essentially manifested in hypertrophy of the skin of the little toe near the digito-plantar fold, and of the tissues surrounding its middle and distal phalanges, with an attempt at spontaneous amputation of the member at or near the first inter-phalangeal articulation; and, in the most advanced cases, in conversion of the bony structure of the phalanges into fibrous tissue. In these cases the toe presents the appearance of a soft, rounded, or ovoid mass, of about the size of a large marble, attached to the foot by a short, narrow pedicle, which allows of motion in all directions; and the patients apply for relief on account of the deformed toe being loose, and getting in the way of walking. In the early stages, the bones are not diseased, and the middle becomes affected before the distal phalanx. The disease is usually symmetrical; but the two little toes do not present the morbid change in the same degree of advancement. In some cases it exists only on the one foot. The changes take place very slowly, and the disease may exist for fifteen years without the middle phalanx having undergone fibrous degeneration. The patients do not exhibit any constitutional disturbance or deterioration of health; and the disease is not accompanied by pain, except in those cases in which ulceration round the pedicle occurs. The fifth digit is the only one affected, and none of the other toes have shown the least tendency to similar changes."

Morbid Anatomy.—Dr. Crombie states that the skin was greatly hypertrophied near, but not just at, the point where spontaneous amputation had been going on. The hypertrophy included both the cuticle and the true skin, but especially the former, which had a grey, homogeneous, translucent appearance, with the papillæ of the true skin very distinctly picked out in a milky colour in its lower layers. The short pedicle which had connected the diseased portion of the toe with the healthy, and which corresponded in thickness to the fibrous tissue replacing the middle phalanx, was covered by a thin layer of substance like that of the hypertrophied cuticle adjoining. The distal phalanx was healthy, but the middle phalanx was represented entirely by fibrous tissue, though its distal cartilage entering into the formation of the second phalangeal articulation, remained unaffected, the joint between the middle and distal phalanges being intact. This cartilage, which had covered the head of the middle phalanx, was firmly attached to the fibrous tissue which represented that bone, especially round the margins, but had itself undergone no change. Neither the flexor nor the extensor tendons could be distinguished from the large quantity of fibrous tissue that passed in thickish bands from the bones towards the skin, and, in all directions, through the subcutaneous tissues. These consisted of a large quantity of fat of the granular character peculiar to the situation, intersected with an unusual amount of fibrous tissue increasing in quantity in proportion to its depth from the surface.

Treatment.—The disease is not usually seen until it is in an advanced state, when all that can be done is amputation of the part. After the operation the wound heals readily. When seen at the early stage it has been cured by the division of the constricting band. The cause of ainhum is not known.

MADURA FOOT OR FUNGUS FOOT OF INDIA.

By James Christie, A.M., M.D.

Syn.—*Mycetoma; Ulcus grave; Tubercular disease of the foot; Morbus tuberculosus pedis; Podelkoma; Keere nugra; Chionyphe Carteri, &c.*

This disease has been, from time to time, carefully described, more especially by the medical officers of the Indian service, by Eyre of Madras, Ballingall, Bagunjee Rustomjee, Day, Minas, Moore, and Bidie; while Vandyke Carter, Lewis, and Cunningham have recently issued interesting reports on the subject. The disease has, within the last few years, attracted considerable attention and excited much discussion, more especially as to its parasitic nature, and it seems to be much more widely spread throughout India than is commonly supposed.

Symptoms.—Madura Foot is not often seen at its very earliest stage, but we have several good descriptions of it from competent observers. Dr. R. Harvey says:—"*The disease commences insidiously and without apparent cause* as a slowly increasing swelling, almost painless, unless under strong pressure; or, accompanied by occasional dull darting pains, followed (after an interval of *months*) by the formation of a small vesicle or abscess, which, bursting, discharges some muco-purulent matter, together with the peculiar fish-roe-like, or black cheesy-like matter, the latter being the more frequent. The swelling gradually increases, and new openings occur from time to time, until the part becomes enormously enlarged and completely riddled, bones and all, by fistulous openings, pain being, as a rule, slight throughout, and the general health little affected." Mr. Bagunjee Rustomjee found, "in the early stage, little or no swelling of the foot; the integuments were natural in colour or slightly congested and hot, having on the surface elevations which, when burst or opened, allowed a thin, yellowish puriform discharge to exude, containing granules like poppy seeds. The skin on the plantar region was irregularly thickened and converted into knots at intervals, and gave, on handling, the feeling of lumps." The disease when fully developed, is characterised by swelling of the affected part, which is studded over with little soft buttery elevations about the size of a pea, having a central aperture leading into a sinus. These enlargements are studded over with little black grains, or masses like fish-roe, which also collect about the openings of the sinuses. From the sinuses are discharged black and white particles with thin sero-purulent fluid. Carter describes three varieties of the disease—the *first* characterised by a discharge of black particles; the *second* by white granules only; and the *third* by a surface appearing, when cut, as if powdered with red pepper. He classified the disease into two groups termed respectively, *melanoid* and *ochroid.* The black particles found in the former he calls *sclerotia,* and the pale particles of the latter *malacrotia.*

Morbid Anatomy and Pathology.—Dr. Carter says :—If a section of a diseased foot be made, there is found "general confusion of parts, owing to absorption of the bones and fibrous thickening of the soft parts; often the presence of granules separated or aggregated in mulberry-like masses of a yellow or brown colour, lodged in spherical cavities excavated in the bone or in the soft parts, or in tunnels or channels leading from the cavities to the apertures on the surface, also lined by membrane. These granules are present in the discharge; sometimes there is a deposit of fleshy (may be reddish or dark coloured) substance, containing numerous minute particles (white or red), and occupying the same localities as the above-mentioned granular deposit. Lastly, in the same localities we find black granules, spheroidal tuberculated masses of the same colour, radiated in structure, which have been mistaken for melanosis or blood-clots."

Ætiology.—Carter contends that the disease depends upon the presence and development of a specific fungus, and hence the designations *Mycetoma* and *Chionyphe Carteri.* He says that, "in some cases, the incipient disease is at first wholly superficial. It is seldom, indeed, that the surgeon has the opportunity of seeing this earliest stage before a sinus has formed, and discharge of particles has commenced. When these events occur the growth is established, for its ripening has commenced. More frequently, perhaps, the inoculated germs *seem* to pass inwards, and there develop and grow, subsequent approach to the surface being then heralded by no more marked local signs than those of an incipient growth which has never left the superficies; but anatomical investigations will, in such cases, demonstrate the existence of wide ramifications within, although there be hardly any sign beyond tumefaction externally visible." There can be no doubt that the black masses are fungoid; but Carter holds that the fish-roe-like masses are also of a fungoid nature, that a fungus is found in both varieties of mycetoma, and that the disease is, therefore, parasitic.

Dr. Carter's hypothesis regarding the fungoid nature of the fish-roe-like masses, has not met with anything like general acceptance by microscopists.

Possibly, the black fungus may be merely an accidental complication; for, when present, it gives rise to *special* sacculi, or loculi, by its growth, and fills these, as also the ordinary sinuses, equally present in the pale variety. The black variety commences in many cases superficially, and Moore says that the melanoid form can be arrested and cured by excising or getting rid of all the black particles in the earlier stages of the disease.

There are, undoubtedly, two distinct forms of Madura foot—the one in which black truffle-like masses of undoubted fungus are found in loculi or sinuses of the diseased parts; but it cannot be said definitely that the disorganisation of parts in this variety ever occurs in the deepest parts primarily, though Dr. Harvey states that the fish-roe-like, as also the black cheesy-like, matter is formed in the part prior to the appearance of any external opening. In the other form, no such fungous elements have been found associated with the small opaquish bodies collected together, and resembling fish-roe masses; though, in both forms, the foot may be greatly enlarged and studded over with openings of sinuses, and riddled throughout with sinuses, the textures being generally disorganised and the bones diseased. Dr. Moore, of Rajpootana, states that, in some instances, not only are the black particles absent, but also the fish-roe-like masses or granules.

Further investigations are necessary before it can be asserted definitely that the disease is essentially fungoid; but it may still hold good that it is of a parasitic nature, and the evidence certainly points in that direction.

The seat of the disease, though most frequently in the foot, is occasionally in the hand or shoulder.

Regarding locality, Dr. Moore states that there is a general impression that the disease is confined to, or is most prevalent on, dark-coloured moist soils, and more especially on cotton soil. But it is frequently met with in Marwar, in Bickanneer, and throughout the whole of the semi-desert districts of Western Rajpootana. The fact of its occurring on these sand tracts, where the rainfall seldom averages more than 7 or 8 inches annually, and where water is 200 and 300 feet from the surface, is important, as, if there be any fungus connected with the disease, it must be a fungus capable of flourishing, not only in moist localities, as cotton soil, but also in dry and sandy places.

Treatment.—The treatment consists, in the early stage, in the free use of caustics and scooping out the diseased portions; in the more advanced stages, in partial or complete amputation where this is practicable. The caustics most successfully employed are potassa fusa and strong nitric acid.

PELLAGRA.

By James Christie, A.M., M.D.

Pellagra (Italian, *pelle,* skin; *agra,* rough), or Italian leprosy, is sometimes called Risipola Lombarda (Lombardy Erysipelas), Lombardy leprosy, and by the common people La rosa.

This disease, which is exceedingly prevalent in Northern Italy, a portion of Southern France, and Spain, is of interest to the dermatologist chiefly on account of the accompanying erythema.

Symptoms.—The earliest symptoms are general *malaise,* weakness, loss of appetite, indigestion, diarrhœa, frequent feverish attacks, and a peculiar tingling sensation in those parts of the skin exposed to the sun's rays.

As the disease advances, cerebro-spinal symptoms appear, such as headache, giddiness, impairment of the special senses, cramps, trismus, retraction of muscles, loss of muscular power, increased sensibility and convulsions, convulsive movements, probably due, in part, to inanition, a morbid condition of the blood, or the absorption of some specific poison. During this stage of the disease, an eruption appears on the exposed parts of the body, the face, neck, chest, and back of the hands and forearms, the exciting cause being ascribed to the action of the sun's rays. The eruption appears first as red spots, then as an erythema of a dull lurid hue which may be accompanied by desquamation, the surface beneath being red, thickened, rough, and fissured. The evolution of the eruption may be accompanied by pain, and desquamation by pruritus; while little bullæ may form which die away, and are replaced by bluish stains. Sometimes, in severe cases, the epidermis is dry, scaly, and shrivelled as if frozen.

Though the general disorder of the system continues, the eruption usually subsides in winter, but reappears with greater intensity in the ensuing spring. The disease may pursue this course for several years; but each year the intermittence is marked by increasing permanence of discoloration, the skin assuming a dark olive brown hue; while subcutaneous extravasation of blood, in the form of petechiæ, appears on the belly and chest.

In the last stage of the disease, these symptoms are intensified; there are great muscular feebleness and extreme emaciation; the skin becomes pruritic or hyperæsthetic, or there is a sensation of chilliness; there is rigidity of the extensor muscles, the fingers becoming semi-flexed into the palm of the hand; phthisis or anasarca may supervene, followed by a typhoid condition and death.

In the last stage of the disease, or sometimes even earlier, a series of peculiar psychical symptoms occur, almost diagnostic of the malady, which Dr. Lambroso describes as *Pellagrous mania.* In the case of the young, there is unusual precocity and activity of the intellectual functions, with arrest of the growth of the body, and of the organs of generation especially. Grisolle states that a large number of sufferers from pellagra commit suicide. They do not kill themselves in a fit of maniacal excitement, but quietly, as though impelled by a purely automatic impulse, the most common mode being by drowning. They do not usually threaten suicide, but quietly, and apparently aimlessly, walk into the water. In addition to this suicidal mania, the patient is despondent and melancholic; though, sometimes, there are delirium, convulsions, and epilepsy, terminating in idiocy.

So frequent is the connection between the two, that Dr. Billod maintained that pellagra was the *result* of insanity. In support of this doctrine, he pointed out that in his Asylum, at St. Gemmes, a large number of patients were affected with pellagra, while the people living in the neigbourhood were free from the disease. It is a fact that the insane are affected; but the disease is not due to insanity, the converse being the case, pellagra in asylums being only a question of general hygiene and alimentation.

The average duration of life, in fatal cases, is about five years. The death-rate varies greatly in different localities, much as the rate of frequency varies. Bellardini states that, in the Milanese districts, 78 per cent. of those attacked recover, 13 per cent. are uncured, 9 per cent. have mental disease, 6 per cent. die from natural causes, and a few are suicides.

Morbid Anatomy and Pathology.—In some cases, there is atrophy of the brain; opacity of the arachnoid, with collections of yellow pigment masses on the capillary walls; congestion and serous effusion of the spinal cord; fatty degeneration of the liver and kidneys; congestion of the lungs; anæmia of the tissues; thinning of the mucous membrane of the intestinal tract, and often ulceration. Visconti found degeneration attended with the presence of amyloid corpuscles in the medulla oblongata, and likewise in the spinal cord, in cases where the nervous symptoms were well-marked; meningitis, occasionally; atrophy and even ulceration of the small intestines, frequently; fatty degeneration of the liver; atrophy of the rete malpighii of the skin occurring in the region of the eruption; but he found no appearance of a distinct deposit, or specially characteristic morbid lesion.

More recently, however, M. Dejerine has called attention to well-marked alterations in the cutaneous nerves:—“The nerves of the skin, in which the eruption was situated, presented very few healthy fibres. Most of the fasciculi consisted of only empty sheaths, and not more than one in thirty or forty contained a nerve fibre. The appearance was that of the peripheral part of a nerve which had been divided several months previously rather than of a normal nerve. The empty sheaths were folded longitudinally by bending in of the wall, and presented nuclei at regular intervals. In every preparation, a certain number of nerve fibres were met with which presented the characteristic lesions of parenchymatous neuritis in different degrees of development. These lesions are the more pronounced the longer the case has lasted.” M. Dejerine is of opinion that the nerve lesions are primary, and that the alterations in the skin must be placed in the category of trophic changes.

Ætiology.—The disease has been ascribed to the poverty, wretchedness, and uncleanly habits of the inhabitants of pellagrous districts; conjoined with bad hygienic conditions, impure water-supply, malaria, exposure to the sun and the dry atmosphere of summer; but there is certainly no evidence that any combination of ordinary deteriorating influences could originate the disease.

The disease appeared first in Milan in 1770; and, in 1798, Thouvenel first enunciated the theory that it was caused by the exclusive use of maize or Indian corn for food, especially when the grain was diseased. This hypothesis has been disputed; but the prevalent opinion, both popular and scientific, since the days of Thouvenel, has been in its favour. Very recently (1882), M. Lambroso published the results of his researches on this subject, which seem to demonstrate the accuracy of this theory in its more essential points. According to Lambroso, Pellagra is undoubtedly developed under the influence of a diet of diseased maize, only the poisonous agent is not, as was formerly believed, the fungus found on the diseased grain, but a special extractive substance obtained by a process analogous to the preparation of ergotine which it somewhat resembles in its characteristics. This extractive he designates *Pellagrozeine.*

Lambroso experimented on twelve workmen, who voluntarily submitted to the ordeal for the public good. He gave to each 6 grammes daily of an alcoholic tincture of diseased maize; and the usual symptoms rapidly followed—viz., boulimia, distaste for food, colic and diarrhœa, prostration, loss of weight, giddiness, headache, impairment of vision, pruritus, desquamation, dryness of the skin, and a peculiar pleasure in seeing and touching water. There was also an increase in the specific gravity, and a decrease in the amount of the urine, which had a red tinge. He then experimented with the alkaloid by injecting ½ a gramme into a frog. After half an hour there were general tetanic convulsions and rapid death. Experiments on rabbits, rats, and cats were followed by like results; but a larger dose was necessary, from 2 to 3 grammes per kilogramme of body weight.

These experiments are exceedingly interesting, and seem to indicate that pellagra is due to chronic poisoning, induced by the slow and prolonged absorption of the alkaloid, pellagrozeine, developed in diseased maize.

Geographical Distribution.—It is said that sporadic cases have occurred in England in the form of an erythymatous eruption on the back of the hands, accompanied by great prostration and cerebro-spinal symptoms; but the disease is there practically unknown. As already mentioned, it is endemic in Northern Italy, Southern France, and Spain. In 1830, it was estimated that, out of a million and a half of Italians, 20,000, or about one-sixteenth of the people, were affected by it. The classes affected were stated to be as follows:—Of poor peasants, 90 per cent.; of artizans, 7 per cent.; and of other occupations, 3 per cent. In 1880, the results of an inquiry into pellagra in Italy, instituted in 1878 by the Ministry of Trade and Agriculture, were published, and from them we learn that, at the close of 1879, there were 97,179 persons affected in Italy, as follows:—

Piedmont, 1,692; Lombardy, 40,716; Venetia, 29,296; Liguria, 148; Aemilia, 18,741; The Marches and Umbria, 2,127; Tuscany, 4,383; Latium, 76. South of Rome, there were no cases; but in that portion of Italy the maize ripens better, and damaged maize flour is not eaten.

From these statistics we learn that, of 6,000,000 of the agricultural population of North Italy, more than 15 per cent. suffered from pellagra; and that, in the province of Brescia, 80 per cent. of the agricultural population were affected by it at the end of 1879.

The subject has been further investigated by the Italian Society of Hygiene,* and the results, published in 1883, confirm previous investigations. In the afflicted provinces, the area planted in maize was 17·78 per cent. of the total area. The number of recruits in these provinces who were rejected for physical incapacity amounted to 20 per cent. in 1879, the proportion being 10 per cent. in districts where pellagra did not prevail. In these districts the labourers live on maize, frequently diseased, and rarely well cooked or salted.

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* *Giornale della Societa Italiana d'Igiene.* Anno terzo (v. iii.), 1881. *La Pellagra.* Dott. G. Riva, pp. 792-845. e. (v. v.) 1883, pp. 312-353.

In the hospitals of certain large towns of Italy—Padua, Brescia, &c.,—there are 5,000 or 6,000 pellagrous patients treated every year.

Lambroso maintains that, while the Government statistics put the number of pellagrosi at 100,000, they are far nearer half a million. He also expresses the opinion that the disease is penetrating into Vattelina and Umbria, and even descending to the territory around Rome at an alarming rate.

Pellagra was recently introduced into Corfu, the first case having been seen in 1839; but the disease has since that time been gradually extending. Dr. Typaldos states that the disease exists among the very poor, whose staple article of diet is bread prepared from Indian corn, called "barbarella." He arrives at the conclusion that the essential cause of the disease is the consumption of maize, which has been imperfectly ripened, or has undergone changes after being gathered.

Prophylaxis.—M. Lambroso recommends various modifications of the cultivation and storage of maize, and of its manufacture into bread. The peasants use damaged grain as an article of diet, which cannot be sold in the market, and which cannot be used even as food for cattle. Advice, or even remonstrance, seems to be in vain, so that legal restrictions may be absolutely necessary.

Treatment.—After a prolonged series of experiments, Lambroso concluded that there is no specific remedy, and no special therapeutic treatment for pellagra. He obtained good results from the administration of opium in cases complicated by fear and stupor; from quinine, when there was prostration; from calomel, arnica, and cold douches, when there was diarrhœa; and, even in extreme cases, from arsenious acid, which he administered in doses of from $\frac{1}{4}$ to $\frac{2}{3}$ of a milligramme *per diem*. In infantile pellagra, and in the form attended by arrest of development, frictions with chloride of sodium were applied with benefit; and cocculus orientalis was found useful in cases of vertigo. The most reliable remedies seem to be medication by chloride of sodium, and the administration of arsenious acid in the doses mentioned.

MOLLUSCUM.

Syn.—*Molluscum contagiosum*—*Molluscum sebaceum*—*Acne varioliformis.*

The term molluscum, derived from mollis, soft, is supposed to have been given to the affection under consideration from its fancied resemblance to molluscous animals. It is most frequently met with on the face and neck, especially on, and in the vicinity of, the eyelids; but occasionally other parts are implicated, such as the genital organs, and the breasts of women who are suckling children suffering from it. In the great majority of cases it attacks children, but it is a comparatively rare affection, having been encountered by me only 22 times amongst 38,054 hospital cases of skin disease. It is right, however, to express my belief that it occurs more commonly than these statistics would imply, for, as it most frequently affects the eyelids or their vicinity, such patients are more likely to be taken to Ophthalmic than to Cutaneous Institutions; indeed the first cases which I ever met with were during the period of my attendance as a student at the Glasgow Eye Infirmary. Amongst the upper classes it is exceedingly rare (not a single case having been met with amongst 2,000 consecutive private cases), which would lead one to suspect that its occurrence is favoured by insanitary conditions, especially by neglect of cleanliness. It seems to be of a contagious nature, the contagion apparently residing in the secretion exuding from the little tumours, although there is a difference of opinion as to whether the contagious elements are certain cells contained in it (the so-called molluscous corpuscles) or fungous matter. It is true that inoculations of the secretion have been performed by a good many observers—amongst others by Hebra and Duckworth—and always unsuccessfully, but the clinical evidence is strongly in favour of the contagious theory; for it is not rare to find it upon the face of a child and upon the breast of its mother, an illustration of which is to be found in the Sydenham Society plates; and Caillaut * has recorded a remarkable case in which a child suffering from it, having been admitted into a Children's Hospital, it spread rapidly from bed to bed until no less than thirty children were attacked.

The **symptoms** of this affection are striking and characteristic. It appears in the shape of little nodules, at first the size of a pin-head, some of which usually increase until they reach the size of a split-pea, and in very exceptional cases they may be as large as, or larger than, a cherry. The surface of each is marked by a little depression, in the centre of which is a small orifice through which the contained secretion—closely resembling sebaceous matter in appearance—can be readily expressed. Generally there are only a few of these nodules, but occasionally they are very numerous. They are sessile at first, but, as they increase in size, they are apt to become pedunculated. They are firm to the touch, as a rule, are either pinkish or of the same colour as the healthy skin, and often glistening owing to the stretching of the skin over them, so as to look somewhat like drops of white wax upon the surface. Occasionally, however, they are the seat of inflammation and suppuration, or even gangrene, and thus a spontaneous cure may result. They are unaccompanied by either pain, itching, or other sensation.

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* *Archives de Medicine*, l. xxvii., 1851.

There is a difference of opinion as to whether they have their seat in, and consist of, a hyperplasia of the mucous layer of the epidermis, or whether—as seems more probable—they are altered sebaceous glands. At all events, on section they are found to be composed of little lobes which are separated from one another by bands of connective tissue, thus resembling hypertrophied sebaceous glands. They are filled with fatty matter and large epithelial cells, mingled with free nuclei; and they contain besides peculiar round or oval glancing bodies (the so-called molluscous corpuscles): these are generally supposed to be derived from the mucous layer of the epidermis, the cells of which have been modified in some unexplained way, but they are apparently not peculiar to molluscous growths.

It is almost impossible for the careful observer, after having once seen a case of the kind, to mistake it for any other affection, the little orifice in the centre of the depression in each nodule, through which the sebaceous-like contents can be expressed, being pathognomonic, not to speak of its usual situation on the face, and the other characters already mentioned.

Treatment.—When the nodules are small a cure may usually be effected by firmly pressing out the contents of each with the fingers or with the scoop (see p. 71), or they may be removed by inflammation resulting from the use of a stimulating lotion or ointment as described under the head of acne (see p. 323). But if large they may be opened with a lancet, the contents thoroughly expressed, and their bases touched with nitrate of silver, tincture of iodine, or liquor ferri perchloridi. If pedunculated, they may be snipped off with the aid of a pair of sharp curved scissors. Not unfrequently, if left alone, a spontaneous cure occurs, generally as the result of inflammation.

FIBROMA MOLLUSCUM.

Syn.—*Molluscum non-contagiosum—Molluscum simplex—Molluscum pendulum—Molluscum fibrosum—Fibroma.*

It is unfortunate that the term molluscum has been applied to this disorder, as it is calculated to lead to confusion with the true molluscum already described, with which it has no connection whatever.

We know very little with regard to its *ætiology,* although one form of fibroma, alluded to later on, seems to be related to the rheumatic diathesis. It seems occasionally to be hereditary, and Virchow has recorded a case in which a patient suffering from it stated that his grandfather, father, brothers, and sisters had similar tumours to his own. Although it does not interfere with the general health, it is most apt to occur in those whose mental and bodily development are below par; indeed, Hebra wrote that all of the patients who came under his observation "were stunted in bodily growth, and of more or less limited mental capacity."* It is met with in all countries, among all races, and in both sexes, but it is a very rare affection. Duhring tells us that the statistics of the American Dermatological Association show 9 out of 16,863 cases of skin diseases, and although I have seen it from time to time in my own practice, and in that of others, my statistics of 40,054 consecutive cases of skin disease show only two cases. As a rule, it commences in childhood, but there are exceptions to this, one of which will be referred to shortly.

Symptoms.—This disease takes the shape of little tumours having their seat in the corium and subcutaneous cellular tissue. At first these are very small—perhaps the size of peas—and little elevated, so that they can hardly be seen, but only recognised with the aid of the fingers; but, as they enlarge, they become prominent and form well-defined tumours of very various shapes and sizes. Some of them are sessile, while others are pedunculated, and their consistence is variable. The smaller ones are usually doughy and soft to the feel, sometimes so much so that they can be easily compressed between the fingers and feel like empty pouches. "On careful examination, however, it will be found that between the apparently empty folds of skin, there is a mass of tissue included which may be followed by the fingers deeply towards the subcutaneous tissue, for it increases in size as it is continued in this direction."† The larger tumours are usually firmer and more elastic, and they may be firm at some parts and soft at others. The skin covering them is usually of a healthy appearance and colour, but in the case of large tumours it may be thin and glistening, and pinkish or even livid; the sebaceous follicles too are apt to be enlarged and plugged with sebum, which can be readily expressed, and the hair is liable to fall out; indeed, when hairy parts are involved, the hair follicles are often destroyed, the surface being smooth and atrophied.

Great variations are observed, not only in the shape, but also in the number and size of the tumours in different cases, and at different parts in the same case. Occasionally they are solitary, or only a few are to be seen, and then usually upon the back, but generally they are very numerous and scattered over the whole body, especially its upper segment. In a case published by Octerlony,‡ of which the accompanying woodcut (Fig. 27) is an illustration, there were upwards of

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* "On Diseases of the Skin," by Ferdinand Hebra, M.D. *New Syd. Soc. translation,* vol. iii., p. 341.

† *Loc. cit.*, p. 330.

‡ *Archives of Dermatology*, August, 1875.

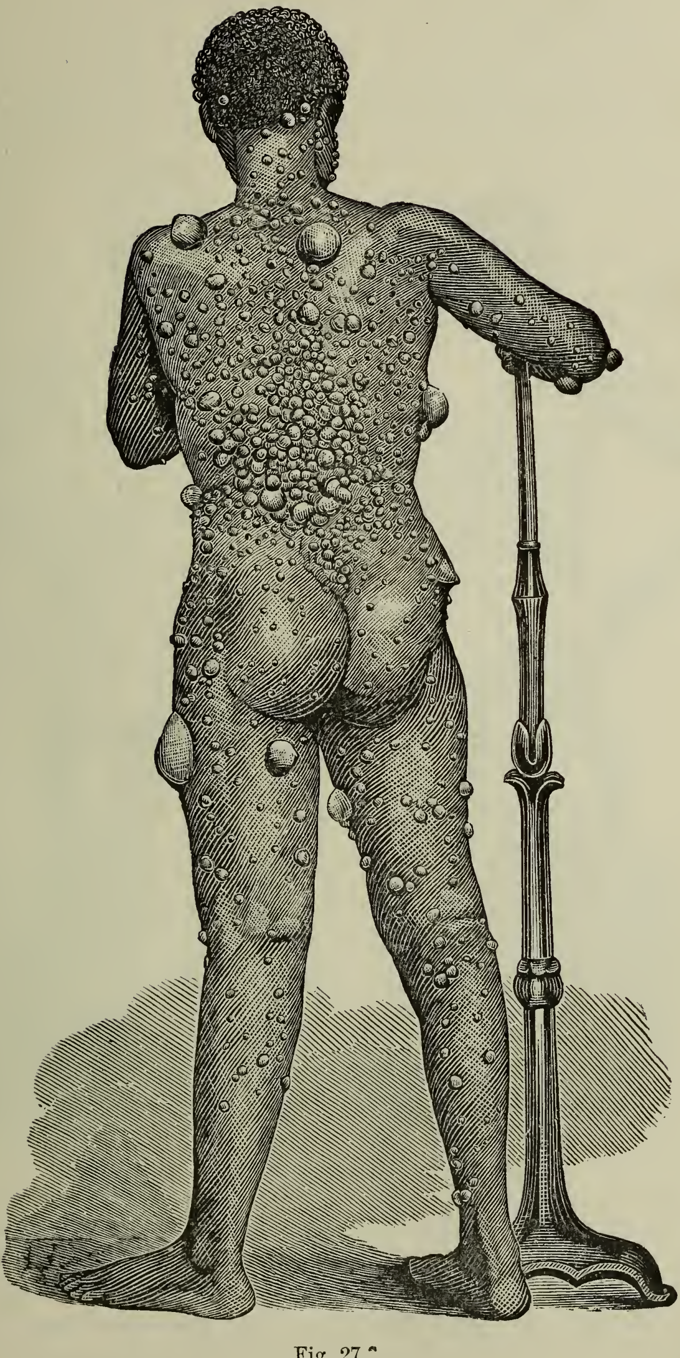

Fig. 27.

2,000 of them. In size they most frequently vary from that of a pea to a small orange, but they may become very large and so heavy as to give rise to great inconvenience, and to interfere with locomotion; but they are never painful unless attacked by ulceration. Virchow tells us that Dr. Heyland once removed one weighing 32½ pounds. Figs. 28 and 29, taken from photographs kindly sent to me by my old pupil, Dr. James Drummond of South Shields, illustrate the same point. This patient was a pitman forty-five years of age, whose personal and family history was good, and whose mental and bodily development was quite up to the average. The appearance

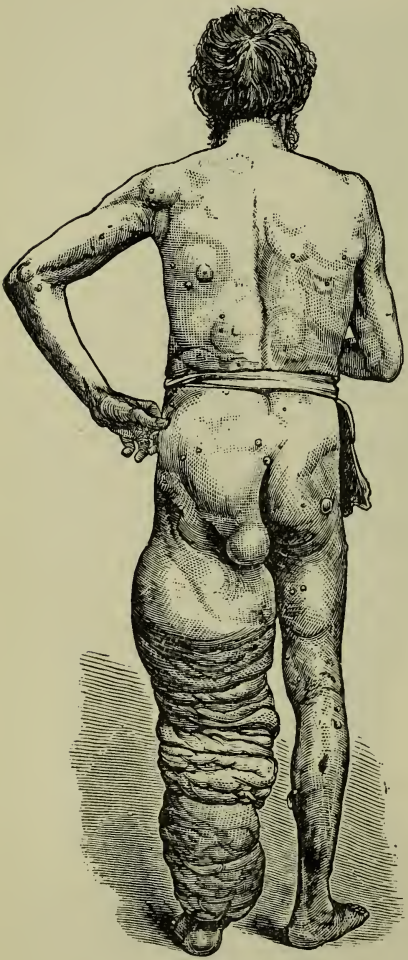

Fig. 28.

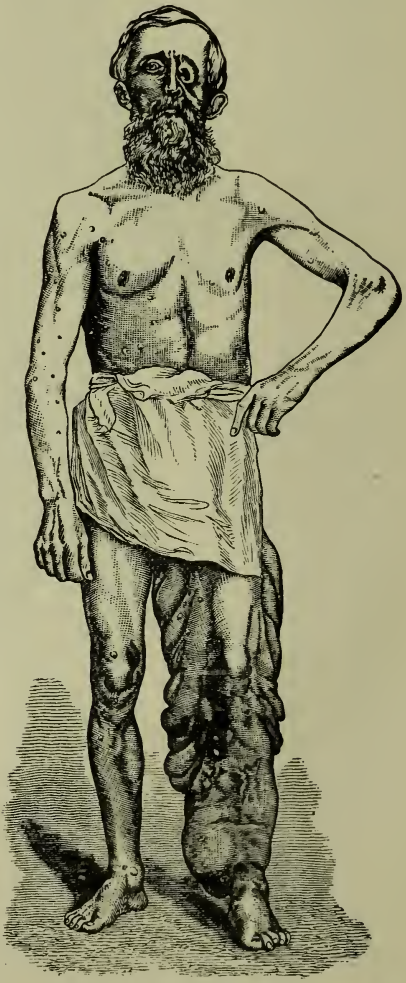

Fig. 29.

presented by his left eye was owing to a tumour, which began in infancy, and which continued to grow until he was fifteen years of age, when it was removed. The operation was accompanied by much hæmorrhage, and the eye-sight was lost. The tumour weighed three-quarters of a pound. The swelling of the eyelids which remained, pulsated considerably, but has not increased since. It is probably nævoid in character, and seems to have no connection with the subsequent disease.

When he was about twenty years of age a swelling appeared about the middle of the left thigh, and it has been increasing ever since. At varying intervals other tumours have cropped up upon the leg, and these, enlarging and coalescing, have given to the limb its present size and appearance. Within the last five years small tumours have appeared all over the body, varying in size from that of a pea to that of a hen's egg, and they are still increasing in size as well as in number. The smallest ones are soft and flaccid, rather dark in colour, have broad bases, and seem to involve the skin and subcutaneous cellular tissue. The larger ones are rather hard and indurated, the skin moves freely with them, and looks coarser than natural. They give rise to no pain, have no tendency to ulceration, and the only inconvenience experienced is due to their size and weight. The following are the measurements of the two limbs:—

	Right.	Left.
Mid thigh, . . .	15 inches.	28 inches.
Knee, ...	12½ „	22½ „
Calf, ...	11 „	18½ „

In rare cases the tumours are not limited to the skin, but likewise implicate the mucous membrane of the cheeks and palate. After they have reached a certain size their tendency is to cease growing, and to remain unchanged.

Sections of them show that they are composed of connective tissue, and that they take their origin from the connective tissue of the deeper layers of the corium and subcutaneous cellular tissue, or from that which surrounds the hair follicles and sebaceous glands (Fagge). Under the microscope, says Duhring,* "small, recent tumours are observed to be made up of gelatinous, young connective tissue. The cells are to be seen more particularly about the periphery, and are traversed by bundles of fine fibrillæ. Older tumours consist in great part of firm, dense, fibrous tissue, closely packed together. When large, the tumours are quite vascular about the bases." Recently, Recklinghausen has pointed out that multiple fibromas of the nerves not unfrequently occur in association with multiple fibromas of the skin, the structure being the same in both localities. Fibroid tumours occasionally occur in connection with rheumatism. Dr. Middleton showed a case of this kind at the Glasgow Pathological and Clinical Society (1886), that of a married woman, aged thirty-nine, who had painful subcutaneous growths on the fingers of both hands which were made up of connective tissue in various stages of development. She had rheumatic fever at thirteen, and a second attack at the age of thirty-six. Between these attacks, and since the last one, she frequently suffered from rheumatism in various joints, accompanied by some swelling. The nodules on the fingers began during convalescence from the second attack of acute rheumatism. According to the patient, they were not at first permanent, but for the last two years they had not disappeared, though they are said to have varied in size and hardness. The accompanying drawing (Fig. 30) gives a very good idea of the appearances, and recalls a drawing in connection with the article on fibroma molluscum in the late Dr. Tilbury Fox's work on skin diseases, although there is no mention of his patient having been rheumatic. But there can

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* *A Practical Treatise on Diseases of the Skin*, by Louis A. Duhring, M.D. Ed. ii., p. 430. Lippincott & Co., Philadelphia.

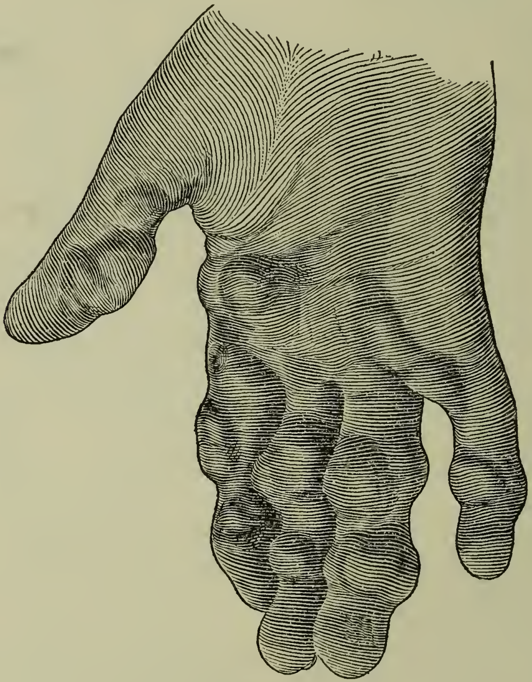

Fig. 30.

be little doubt that the rheumatic diathesis is favourable to their development.*

An error in **diagnosis** can hardly be made if the appearances presented by the illustrations are carefully examined and compared with the description above given.

Molluscum contagiosum is not hereditary, though contagious; the tumours are more superficial, have a special tendency to attack the face, and in the centre of the depression in many of them an aperture is observed, from which sebaceous-like matter can be expressed.

Multiple neuromata follow the course of the nerves, are apt to be confined to one set of nerves and their branches, and are painful; while *Multiple lipomatous* tumours are lobulated and firmer, and, if one of them is removed, it is found to consist chiefly of fatty matter and not of connective tissue.

Local treatment is alone of service, and consists in removing the tumours when they are not very numerous. This can be done sometimes by ligature, sometimes with the aid of the thermo- or galvano-cautery, or with the scissors or knife, according to their shape and size. In some cases a plastic operation is required, but, whatever method of operative interference is resorted to, especially in the case of pedunculated tumours, care must be taken to prevent hæmorrhage, which may be very considerable, owing to the enlargement of the blood-vessels at their bases.

COLLOID MILIUM.

Colloid Degeneration of the Skin.

This rare affection was first described by Wagner † and results from colloid degeneration of the skin, commencing as an infiltration of the upper part of the corium, especially in the vicinity of the sebaceous glands.

The upper part of the face is generally attacked, especially the upper portions of the cheeks, the eyelids, and forehead. The neck and upper arms may also be involved, as well as the anterior surface of the chest, " in the shape of half a cuirass " (Darier). Males and females are equally liable to it, and it does not generally appear before puberty: its ætiology is obscure.

It consists of little firm, isolated nodules, from the size of a pin-head to that of a pea, which are more or less imbedded in the corium. They may not differ in colour from the surrounding skin, but they are often yellowish, and they have a glistening and translucent appearance so as to resemble vesicles. When punctured a small quantity of gelatinous material can be expressed. There are no subjective symptoms, so that the condition, if not very pronounced, is apt to be overlooked.

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* See a paper on "Subcutaneous Nodules connected with Fibrous Structures occurring in children, the subjects of Rheumatism and Chorea," by Drs. Barlow and Warner. *Trans. International Med. Congress.* London, 1881, vol. iv., p. 116.

† "Das Colloid-Milium der Haut," *Archiv der Heilk.* Bd. vii. (1866), p. 463.

It cannot be mistaken for milium if it be remembered that the nodules in the latter are opaque and whitish yellow in colour, and disappear by puncture and the removal of the whitish sebaceous matter. (For the diagnosis from adenoma sebaceum, see the following article.)

This is an obstinate affection and difficult to eradicate, but spontaneous recovery may take place, the nodules becoming depressed and gradually disappearing; or inflammation may attack them, and, when the crusts fall off, a slight depression is left. The destruction of the nodules is best effected by means of electrolysis or by erasion with the sharp spoon.

ADENOMA SEBACEUM.

Syn.—*Adénomes sébacés* (Balzer)—*Végétations vasculaires* (Rayer)—*Nævi vasculaires et papillaires* (Vidal).

Attention was first prominently directed to this affection by Balzer, under the title of "Adénomes sébacés," but cases had previously been recorded by Rayer, and Addison and Gull; and we are indebted to Pringle for a very interesting paper on the subject.*

Symptoms.—It is met with almost exclusively upon the face, especially its middle two-thirds, and where the sebaceous glands are most abundant. The eruption consists of little firm, insensitive, whitish or yellowish nodules, varying in size from a pin-point to a small pea, and imbedded in the skin at varying depths, or projecting from it. These are generally very numerous and closely set together, but they are rarely, if ever, confluent. They have no orifices, but, when punctured, sebaceous matter can generally be expressed. Mingled with these lesions are numerous dilated capillary vessels and stellate telangiectases, and many of the nodules may appear red owing to dilated capillaries coursing over them. Other degenerative defects of the skin frequently co-exist, and are not limited to the face, such as warts, nævi, fibromata, &c. It is a benign affection, and, although pain has been known to be complained of in cold weather, it is chiefly annoying from the disfigurement to which it gives rise. When any of the nodules disappear little white cicatricial pits are left, which, however, are said to be temporary.

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* "A case of congenital Adenoma Sebaceum." *Brit. Journ. of Derm.*, Jan. 1890, p. 1.

The chief pathological changes are met with in the corium: "its upper papillary layer is enormously hypertrophied, but there is no evidence of inflammation or cellular infiltration. The warty, irregular aspect of the skin is due in part to this change, . . . but it is in the deeper layers that the essential lesions lie. They consist in an enormous increase in number and complexity of the sebaceous glands. . . . No morbid change could be observed about any of the rare sweat glands."[*]

This disease, which is more frequently met with in females than in males, is generally congenital, or at least sets in in early life, although we are more likely to encounter it at or after puberty when it is apt to become aggravated, and when patients become anxious with regard to their personal appearance. It is met with chiefly among the lower classes, and in those who are intellectually below par, especially in epileptics and imbeciles.

Diagnosis.—The affections most likely to be mistaken for it are *Hydradenoma* and *Colloid milium*. *Hydradenoma* (Lympho-cystadenoma—Török) is apparently an analogous condition of the sweat glands and closely resembles it. But it has a preference for the forehead, and may affect the trunk of the body as well as the face: there is also a greater tendency to grouping of the nodules, and there is no complication with telangiectases. Sometimes, however, the diagnosis can only be arrived at by a microscopic examination of the nodules.

The following points should aid in the diagnosis of adenoma sebaceum from colloid milium:—

Adenoma sebaceum.	**Colloid milium.**
1. Middle portions of face oftenest attacked.	1. Brow and orbital regions specially liable to attack.
2. Nodules very numerous.	2. Nodules more scanty.
3. Colour of nodules whitish, yellowish, or red, and they are not translucent.	3. Nodules yellowish and translucent.
4. Telangiectases a very constant accompaniment.	4. Telangiectases not usually present.
5. Congenital or nearly so, and oftenest seen on those who are intellectually deficient.	5. Not generally seen before puberty and no intellectual deficiency.

Treatment.—Internal treatment seems powerless to influence the disease, and, if anything is done, it must be of a surgical nature. The nodules have been removed with the aid of the curette (Hallopeau) and by means of electrolysis (Radcliffe Crocker) when the lesions are small, but there is no certainty that they will not recur.

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[*] *Op. cit.*, pp. 5, 6.

VITILIGOIDEA.

Syn.—*Xanthelasma*—*Xanthoma*—*Fibroma lipomatodes* (Virchow).

"We sometimes observe on the eyelids, and in their vicinity, yellowish patches, resembling chamois leather in colour, which are slightly elevated, soft, without heat or redness, and sometimes disposed symmetrically." Such are the words of Rayer, who first alluded to the disease, and who in his *Atlas* has given an excellent illustration of it under the title of "Plaques Jaunâtres des Paupières."*

But the merit of having brought it prominently under the notice of the profession is due to Drs. Addison and Gull,† who gave to the affection the name of vitiligoidea, because they believed that, from Willan's description of vitiligo, he would have probably included it under that head. Wilson proposed for it the name of xanthelasma‡ (from ξανθός = yellow, and ἔλασμα = lamina) owing to the yellowish plates which usually characterise it, while Dr. William Frank Smith has suggested the term xanthoma.§

Two forms of the affection are met with, to which Addison and Gull give the names of vitiligoidea plana and vitiligoidea tuberosa, and which may occur separately or be combined in the same case.

(1) *Vitiligoidea plana.*—This variety is generally met with at or after middle life. Its usual seat is the eyelid, from which it sometimes spreads to the adjacent parts of the cheeks and nose, and to the ears, but it is also encountered upon the trunk and extremities. A small patch commonly makes its appearance about the centre of the inner half of the upper lid, which tends frequently to spread inwards around the inner canthus, and then outwards along the lower lid to nearly the same extent. A patch likewise often appears on the upper lid near the outer canthus, and sooner or later the other eyelid becomes similarly affected, for the disease is generally symmetrical. The patches are usually slightly elevated, especially at the edges, which are abrupt: they are smooth, soft, and generally painless, and have a yellowish or creamy colour. They vary in size from that of a pin's-head to that of the finger-nail.

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* *Traité des Maladies de la Peau*, 1835, and Fig. 15 of Plate xxii. of his *Atlas*.

† *Guy's Hospital Reports.* 2nd series, vol vii., p. 265.

‡ *On Diseases of the Skin.* Ed. vi., p. 773. London: J. Churchill & Sons. 1867.

§ *Journal of Cutaneous Medicine*, vol. iii., p. 241. London: J. Churchill & Sons. 1869.

(2) *Vitiligoidea tuberosa* (*Xanthoma multiplex*) appears in the shape of little nodules varying in size from millet-seeds to large peas, and which occasionally become confluent: they often have a mottled appearance owing to dilated capillaries coursing over them, and are frequently tender, and the seat of pricking or burning pain, especially when compressed; otherwise they present all the characters pertaining to the other variety of the affection, indeed the macular sometimes changes into the tubercular form. The latter is rarely seen upon the eyelids, "being more frequently met with on the cheeks and ears, also, however, on the palm of the hand, along the normal folds and lines, on the flexor surfaces of the phalangeal joints, more rarely on the extensor surfaces of the joints of the fingers and wrists, on the flexor and extensor surfaces of the toes, and on the sole of the foot." *

Xanthoma multiplex is decidedly rare, especially the form which occurs in children, of which not more than twenty cases have been recorded. In them the eyelids almost invariably escape, and the liver is not affected. On the other hand, when xanthoma multiplex does not commence till after puberty, in most cases (about four-fifths) there is chronic jaundice from obstruction of the bile ducts, and the eyelids are almost always implicated—indeed, the disease commences there.†

The following is a good illustration of apparently congenital xanthoma multiplex:—

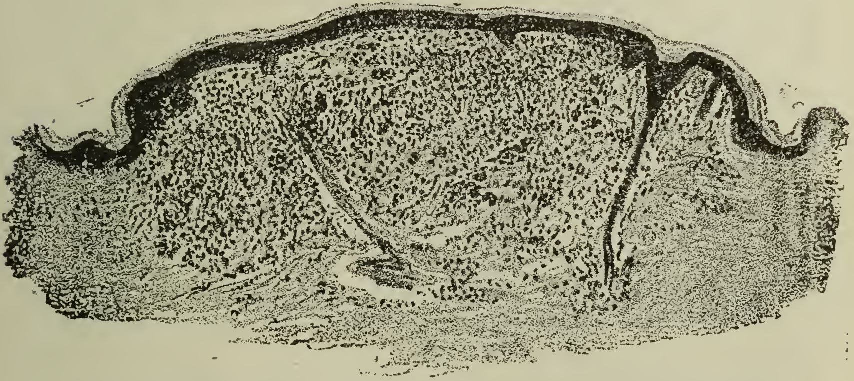

Fig. 31.—Section stained with logwood; the affected part highly cellular contrasts with normal at either side.

D. F.,‡ aged 3, was admitted to Ward 4 of the Western Infirmary of Glasgow on May 30, 1892, suffering from an eruption of unknown duration. Her aunt states that she knows nothing of the history of the child, whose parents died some time ago. The eruption was in its present condition when she came under her aunt's care three months ago. As far as is known, she has always been healthy.

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* "On Diseases of the Skin." By F. Hebra, M.D., and M. Kaposi, M.D. *New Syd. Soc. translation*, 1874, vol. iii., p. 347. London.

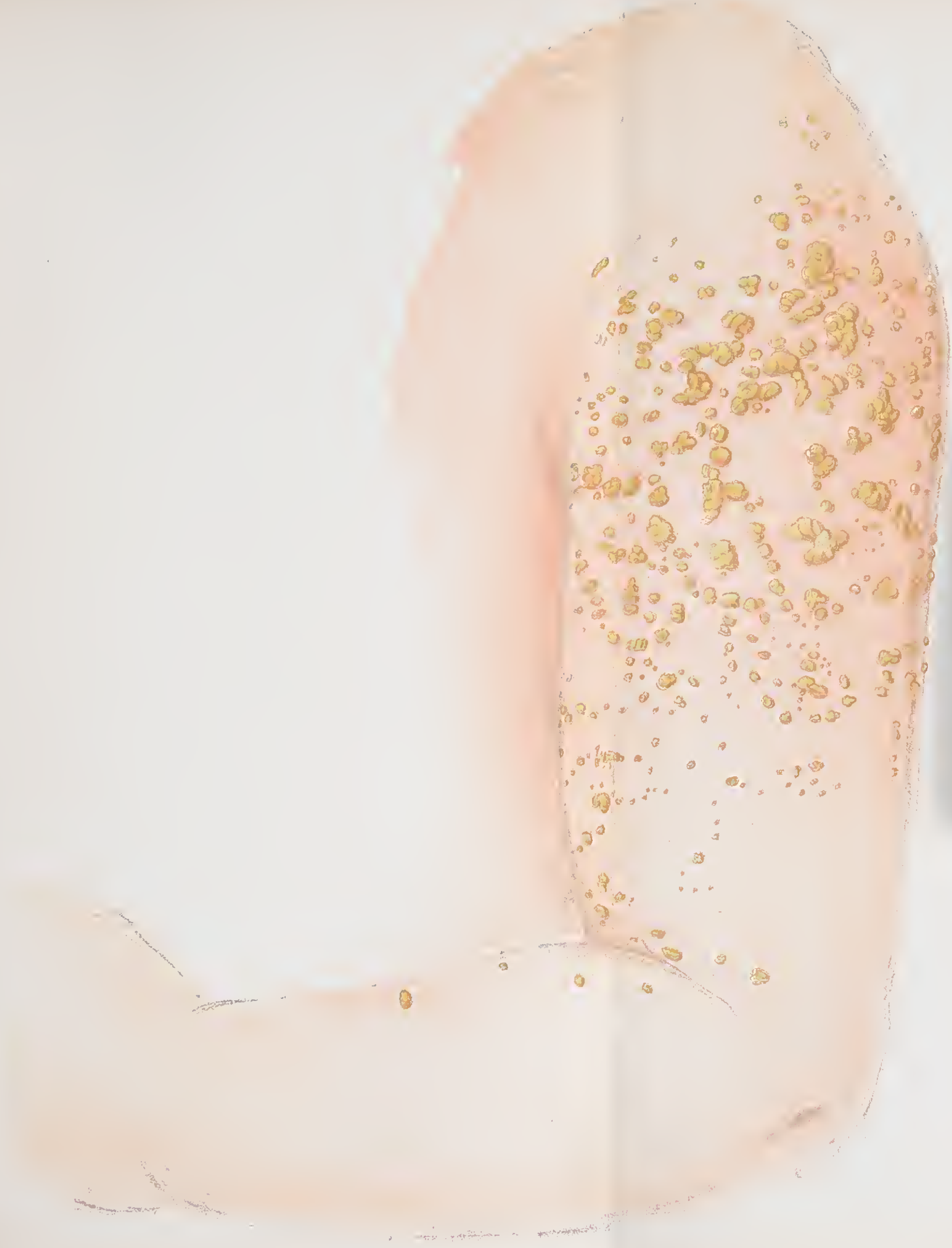
† See, if desired, the Report of the Xanthoma Committee in the *Transactions of the Pathological Society*, vol. xxxiii., p. 376.

‡ Reporter, Wm. R. Jack, M.B.

The eruption consists of numerous papules, very closely set, and varying from the size of a pin-head to $\frac{1}{16}$ inch in diameter. Where two or more of these have run together, they form patches about the size of a split-pea. The separate papules are rounded, and have a flat surface, glistening in certain lights. The outline of the confluent patches is made up of segments of circles. The papules, which are elevated in proportion to their size, are of a light buff colour, soft in consistence, and the surrounding skin is nowhere thickened or infiltrated, or in any way altered.

The eruption, which is symmetrical, is situated upon the face, neck, shoulders, arms, and legs, and is most copious upon the shoulders. The papules, and the patches formed by their coalescence, are grouped into irregular clusters. The largest of these is situated over the deltoid on either side, and extends along the posterior aspect of the arms as far as the elbows (*see coloured plate*). A few papules are scattered over the flexor aspect of the arms as far down as the wrists. These are for the most part of smaller size and lighter colour. There are none on the hands. A large band of eruption runs from the lobe of the ear on one side beneath the chin to the corresponding point on the opposite side. The eruption is also present on the forehead, but here the papules are small and discrete. A few discrete papules also appear on the cheeks. The trunk is free anteriorly, and posteriorly as low down as the last sacral vertebra. There it reappears, and extends in a discrete form down the back of either thigh as far as the knees. A few scattered papules occupy the flexor surface of the knees and legs: the feet are not affected. Sections of the nodules were made by Dr. Joseph Coats, and the following is his report:—

"Small portions of the skin, including parts of the eruption, were excised under ether spray. They were then hardened in Müller's fluid, and sections were cut in the microtome after freezing. Some sections were stained with logwood and with alum carmine, and some were treated with osmic acid. The structure is illustrated in the four figures, Figs. 31 and 32 being from a section stained with logwood, and Figs. 33 and 34 from one treated with osmic acid. The eruption is in the form of a slight elevation of the skin, as shown in a rounded prominence of the general surface. The prominence is due to an enlargement of the cutis vera, the epidermis being somewhat flattened over the surface, and the interpapillary processes considerably diminished. This is seen by contrast with the unaltered skin on either



side of the prominence. The prominence is obviously due to an excess of cells in the affected portion of cutis vera. This is abundantly visible in Fig. 31, where the contrast in this respect with the normal skin on either side is very marked. The cells are only to a limited extent related to the blood vessels.

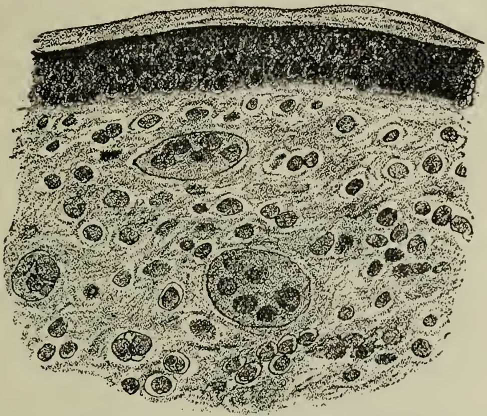


Fig. 32.—Part of Fig. 31 with high power: many of the cells are large and multinucleated.

"Fig. 32, which is a part of Fig. 31, more highly magnified, shows the character of the cells in the affected area. The cells are mostly of considerable size, and many of them are of very large size. In the figure several of these latter are shown with a number of nuclei, and with all the characters of giant cells.

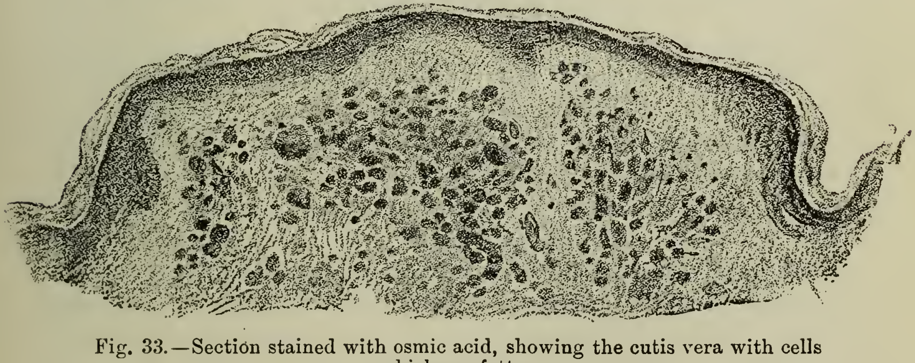


Fig. 33.—Section stained with osmic acid, showing the cutis vera with cells which are fatty.

"Figs. 31 and 32 are from a section mounted in Canada balsam, and are prepared so as to show the individual nucleated cells. Figs. 33 and 34 are from a section stained with osmic acid, so as to bring out the presence and locality of the fat in the lesion. In Fig. 33 fat is seen to be present by the appearance of dark areas throughout the affected area in the cutis vera. Even with this power it can be seen that the fat is collected into definite masses or clumps suggesting cells.

"In Fig. 34, which is from the same section more highly magnified, the fat is seen to be in larger and smaller collections, evidently limited by the outlines of cells. It also appears that many of these cells are of large size, being strictly comparable with the giant cells shown in Fig. 32. In sections stained with alum carmine and osmic acid the nuclei of these cells could be seen along with the fat. The fat, as shown in Fig. 34, is in the form of small homogeneous granules, giving the characteristic appearance of fatty degeneration.

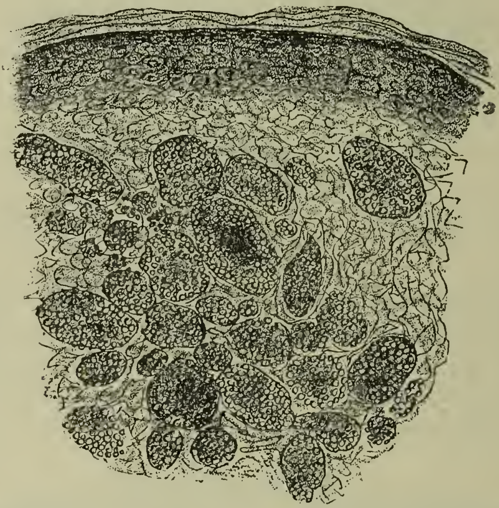


Fig. 34.—Part of Fig. 33 with high power. The fat is in cells, chiefly large ones, such as those shown on Fig. 33.

"Summing up the pathological conditions present, it may be said that we have here evidences of an irritant acting on the skin, and producing the lesions of chronic inflammation in the form of a cellular new formation. The cells are similar to those arising from such irritants as those of tuberculosis and syphilis, but have not the arrangement or mode of aggregation which is generally found in the latter. There is the further resemblance to a tuberculous lesion that the cells have this striking degenerative tendency manifested in the fatty condition. I do not mean to say that the irritant here is that of tuberculosis, but the presence of giant cells and the degenerative tendency certainly suggest that a morbid virus of some kind has played a part in the production of the eruption."

This disease is, however, not limited to the skin, for the mucous membranes are occasionally attacked, especially those of the lips, gums, tongue, and palate; it has also been observed in the larynx and trachea, and in the hepatic ducts, as well as on the lining membrane of the left auricle, aorta and pulmonary arteries, and on the surface of the spleen.

It is more common in women than in men. That there is some connection existing between it and liver disorder is shown by the fact that of thirty cases collected by Kaposi, jaundice occurred in fifteen, either along with, before, or after the development of the disease. "The connection," wrote Addison and Gull, "of this affection with hepatic derangement is obvious, and the exception which occurred in diabetes, is of the more interest, insomuch as modern pathology points to the liver as the faulty organ in this disease." It does not seem that there is any special form of liver disease associated with xanthelasma, although Dr. Frank Smith holds that the jaundice is *sui generis*, and seems to be a "pigment jaundice alone." The disease is not uncommonly met with in persons suffering from diabetes, although some hold that the so-called xanthoma diabeticorum is different from ordinary xanthoma. The only grounds for this belief are thus summed up by Messrs. Malcolm Morris and Jackson Clarke (who, however, hold that the processes are identical):—

"1. While ordinary xanthoma . . . is slow in evolution, and generally permanent, xanthoma diabeticorum appears suddenly, and subsides almost as suddenly.

"2. While xanthoma planum almost invariably begins on the eyelids, and is usually confined to them, and xanthoma multiplex chiefly affects the flexor and extensor surfaces of the limbs, the eyelids, and the palms, the diabetic variety for the most part attacks the neck, trunk, and extensor surfaces of the limbs.

"3. While jaundice is a very frequent accompaniment of ordinary xanthoma in adults, and diabetes mellitus has never been recorded as occurring in association with it, the reverse is the case as regards xanthoma diabeticorum, in which sugar in the urine is a constant feature and jaundice an unknown complication."*

Hutchinson, on the other hand, has drawn attention to the common association of xanthelasma with sick headaches and other forms of functional derangement of the nervous system, for, in thirty-six cases, he found a history of sick headaches in twenty-one, in fifteen of which they were of great severity. When all is said, however, it must be admitted that the pathology of this curious affection is still obscure.

The only disease liable to be mistaken for vitiligoidea is *Milium*, especially when these little sebaceous nodules are closely set together, and the mistake is all the more likely to occur seeing that milium is not uncommonly met with in those suffering from vitiligoidea. The skilled observer, however, is not likely to make a mistake; and all doubt is set at rest by making an incision into the nodules, when, in the case of milium, the sebaceous contents can be readily expressed.

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* *Brit. Journ. of Dermatology*, August, 1892, p. 250.

Treatment is not very satisfactory. Wilson recommends the administration of nitro-muriatic acid with bitters, and the occasional use of blue pill, also a course of arsenic. Locally, he advises the destruction of the deposit by means of potassa fusa, but it is generally admitted that the safest way of getting rid of the patches is by excision. If this course is adopted, great care is required where the disease is seated in the eyelids, as ectropium may result, and the cornea may be left insufficiently covered, so that the remedy may be worse than the disease. The patches sometimes tend to improve spontaneously, but it is rare for them to disappear entirely, although a case of this kind has been reported by Wickham Legge.

CHELOID.

Syn.—*Keloid*—*Cancroid*—*Kelis* (Alibert)—Germ., *Keloid*—
Fr., *Chéloïde*.

This disease was first described by Alibert[*] under the name of cancroid, and later of kelis; but, as Wilson has pointed out, cheloid is a more appropriate term, being derived from the Greek word χηλή = a crab's claw, which it somewhat resembles, while kelis is a Greek word signifying a mark or blemish. It must not be confounded with the keloid of Addison, sometimes called the kelis Addisonii, and which is described later on under the name of scleroderma. For, although both diseases are of the nature of fibromata, they are quite distinct affections, and cannot be mistaken at the bed-side, the complaint at present under consideration being a circumscribed disease of the derma—a tumour, in fact—whilst scleroderma, as we shall see, is a diffused affection, and implicates the subcutaneous cellular tissue as well.

Two varieties of keloid are met with—the true and the false.

1. *True Cheloid* (spontaneous Cheloid).—This is a very rare affection. Among 40,054 cases of skin disease, four cases of true, and five of false cheloid were met with, while Kaposi tells us that in Vienna it has occurred about once in every 2,000 cases.

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[*] *Description des Maladies de la Peau observées a l'Hôpital St. Louis*, par J. L. Alibert. Barrois L'Ainé et Fils. Paris, 1806. p. 113.

The disease, whose starting point is cell-infiltration around the vessels of the corium, consists essentially of a circumscribed development in the cutis of dense fibrous tissue, which ultimately contracts. but without implication either of the epidermis or of the papillary layer of the corium. It is usually seen between the breasts, lying across the middle of the sternum, but any part of the trunk or extremities may suffer; indeed, the last case which I met with was situated on the back of the chest. It is exceedingly rare upon the face.

Symptoms.—It usually commences in the shape of a small nodule (or several nodules which run together), which very slowly increases in size until it may measure an inch or two in length, and half to three-quarters of an inch in breadth, but it may even be as large as the palm of the hand. It increases very slowly in bulk, so that months or even years may elapse before it attains its full growth, after which it undergoes little change, as a rule, and may continue for life; but in very exceptional cases it slowly decreases, or may even disappear entirely, in which case a white wrinkled depressed cicatrix is generally left. It varies in shape, but is most frequently oval, oblong, or cylindrical; it is raised two or four lines above the level of the skin, has usually rounded, abrupt, elevated edges, may be somewhat depressed in the centre, and usually sends forth at each end white branches or roots, which become bifurcated, and are gradually lost in the surrounding skin, so that it somewhat resembles a crab with extended claws imbedded in the skin. It was on this account that Alibert at first gave to the disease the name of cancroid, not—as some have supposed—because he thought it allied to cancer.

The little tumour, which rarely if ever ulcerates, is white, or of a pale rose tint, and marked by white lines, and the skin covering it is thin, tense, and firmly adherent. It has a polished and shining appearance, is often streaked with dilated vessels, and is occasionally the seat of desquamation. To the touch it is firm and elastic; it is somewhat tender on pressure, and is often the seat of intolerable itching—especially at night, or when the patient is heated—but sometimes the itching gives place to pain of a burning or even shooting character, which at times may be very severe. It is usually solitary, but occasionally two or three little tumours are observed, and it is only in rare instances that they are numerous. Even then they are generally limited to a single region of the body, but they have been observed to be symmetrically arranged.

Females seem to be more frequently attacked than males. It is rare in childhood, being most apt to appear in middle life, and in those who otherwise enjoy good health. It has been met with in several members of a family, and has even been known to descend from parent to child. It resembles cancerous affections, in so far as its hardness, the shooting pain which sometimes accompanies it, and its almost uniform return after operative interference, are concerned; but it is evidently not a member of the carcinomatous group, for it has no tendency to undergo retrograde metamorphosis and to ulcerate, the neighbouring glands are never implicated, the general health in no way suffers, and it has been seen to subside spontaneously.

2. *False Cheloid* (spurious Cheloid—cicatricial Cheloid).—The affection above described is an idiopathic one, whereas the condition to which the name spurious cheloid has been given, is in a sense traumatic, that is to say, it attacks cicatrices, the result of previous ulceration, although we can never tell beforehand what kind of scars are likely to take on this untoward complication. Its occurrence is quite independent of the nature of the primary lesion, having been known to follow upon leech bites, the perforation of the ears for ear-rings, acne nodules, syphilitic and strumous affections, and the use of caustics for the destruction of various morbid states; but it has, perhaps, been most frequently met with in the cicatrices consequent upon the healing of burns. It seems to be a more frequent complication in people of colour than in white races. The appearances presented are very similar to those of true cheloid, but the affection has no special seat of predilection—the situation of the deformity depending entirely upon that of the cicatrix—the morbid condition attacks the cicatricial tissue or the skin around it, and may be very extensive as in the accompanying illustration (see Fig. 35), the new formation of fibrous tissue in which case developed upon the cicatrix resulting from a burn in early life. Spurious differs also from true cheloid in that there is no accompanying itching, as a rule, nor is the part the seat of lancinating pain; and yet it is not unlikely that the same unknown state of system which favours the appearance of the one is likewise favourable to the development of the other.

Treatment.—Internal treatment is of very little use, although doubtless arsenic will often be resorted to, and as regards external applications, probably more harm than good has resulted from their use. At any rate, destruction of the growth by caustics and its removal by operation are to be deprecated as the disease has almost invariably recurred, and generally in a more aggravated form than before. Nor can we agree with those who recommend repeated blistering of the surface of the tumour, or painting it daily with tincture of iodine. Hardaway (*Annales de dermatologie et de Syphiligraphie*, April, 1887) recommends electrolysis in the shape of repeated multiple punctures, sometimes tattooing the surface, sometimes burying the needle in its interior in various directions. And Guyard (Thèse de Paris, 1886) is in favour of multiple scarifications. Erasmus Wilson recommends that

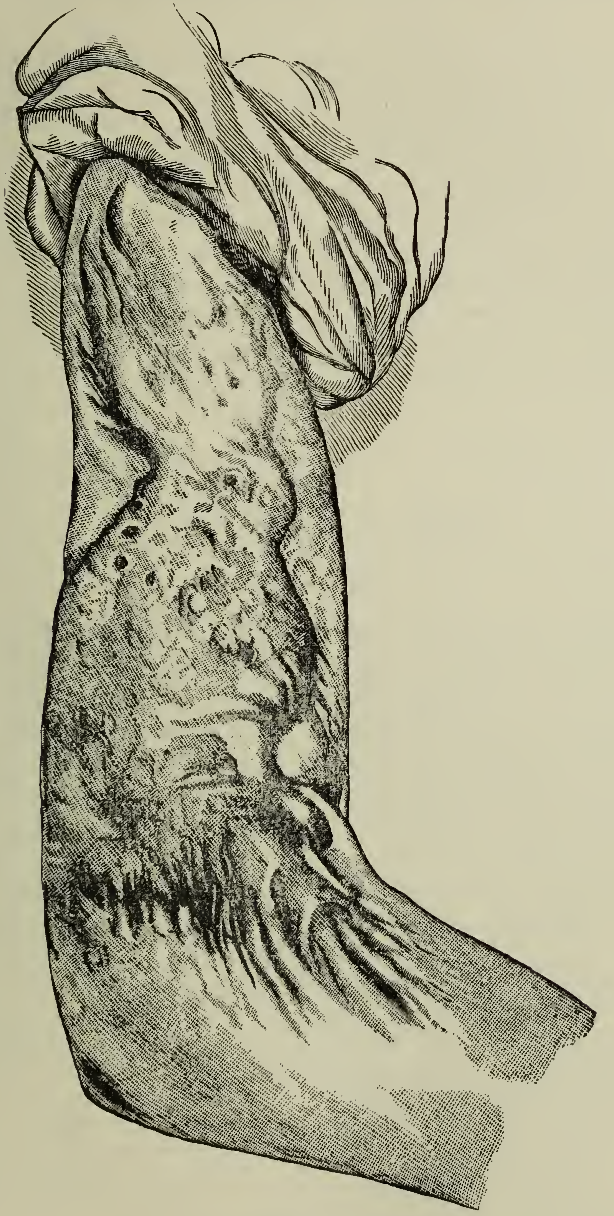

Fig. 35.

the parts should be painted with a spirituous solution of soap and iodide of potassium, and then covered with an adhesive plaster spread on wash leather, the application being repeated as often as the plaster becomes loosened; and he states that he has seen a multiple cheloma cured in this way, aided by mild doses of the perchloride of mercury.

In every case it is desirable to protect the parts from pressure, and to avoid friction, which may be accomplished by the method just mentioned; or, instead of this, the emplastrum plumbi, or—if there is much uneasiness—a belladonna or opium plaster may be preferred, or a plaster sprinkled over with powdered opium as recommended by Kaposi.* If itching is a troublesome symptom, a lotion of hydrocyanic acid,† or an ointment containing chloral and camphor may be tried.‡ If there is severe pain, it may be necessary to resort to the use of sedatives and narcotics, the enumeration of which would be out of place here, but the most efficient in aggravated cases is the subcutaneous injection of morphia at bed-time.

NÆVUS.

(*Arterial—Venous—Capillary.*)

By H. C. Cameron, M.D.

These tumours constitute a most important class of surgical ailments, not only because they are disfiguring, and not wholly free from danger, but because one case varies so greatly from another in structure, in progress and tendency, in anatomical relations, in size and form, that each must be judged entirely on its own merits in determining the question of suitable treatment. They are almost always congenital. Occasionally, from small size or hidden situation, they escape notice until some sudden increase in growth—it may be when the child is several months or years old—attracts attention. At times they make their first appearance during adult life. They may be single or multiple; and occur often in the children or grandchildren of those who have themselves been the subjects of nævus. Their commonest situation is in the skin and subcutaneous tissue. All portions of the hairy scalp and skin are affected by them, but they occur on the head and face much more frequently than elsewhere. Very often a nævus is, for the most part, a subcutaneous tumour, but here and there it invades the skin, so as to render portions of it discoloured, because nævoid. At other times it is entirely subcutaneous, being everywhere covered with sound skin; while, again, it may be found not to involve the subcutaneous cellular tissue at all, being either a superficial discoloration of the skin, or a pedunculated outgrowth from its surface, like a piece of a cock's comb. The disease occurs in other structures besides the skin, such as muscle and intermuscular septa, bone, the liver, the tongue, the gums, the buccal mucous membrane, &c. But, whatever their situation, the tumours consist of large numbers of tortuous, and often varicose and sacculated, blood-vessels, bound together by connective tissue. Beyond their limits—and they are always distinctly encapsuled—the blood-vessels, at least in the early stages, are not enlarged, but are such as might be expected in the particular region involved in each case. The only exception to this rule, which I have observed, is where two nævi occur close together. Large and tortuous vessels may then, sometimes, be seen passing from one to the other in the otherwise healthy, intervening subcutaneous tissue. A good deal of fat occasionally enters into their composition, and cases have been met with which were in reality partly fatty tumour and partly nævus. Certain forms of the disease are prone to undergo, when of long duration, cystic degeneration. Their tendencies and progress are always very uncertain. One will spontaneously disappear; another will remain stationary for years; a third will increase, from the very first, with immense rapidity. All the varieties of the disease are prone to ulcerations of their surfaces, and consequent hæmorrhages of more or less gravity.

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* ℞ Empl. de Vigo, Empl. de Melliloto āā unc. semis. Malax. et extenso supr. linteum insperge pulver. laudani pur scrupulum.

† ℞ Acidi hydrocyanici dil. . . . . . . ʒij.
Liq. bismuthi (Schacht), ... ℥iss.
Glycerini (Price), ... ʒvi.
Aquæ camphoræ, ... ℥iiiss. —*M.*

‡ ℞ Chloralis hydratis,
Camphoræ, āā, ... gr. x.
Misce intime et adde
Ungti. simplicis, ... ℥i. —*M.*

We speak of arterial, venous, and capillary nævi, according as arterioles, veins, or capillaries predominate in their structure.

Arterial Nævus; Arterial Varix; Aneurism by Anastomosis; Cirsoid Aneurism.—This form of the disease (which on account of its symptoms received from John Bell the name of Aneurism by Anastomosis) is most common in the head, neck, hands, and feet, although it occurs elsewhere. It is always congenital. At birth it is usually small, and may not enlarge so as to attract attention until after puberty. It is subcutaneous in situation, and, having a free communication with the arterial system around it, pulsates synchronously with the heart. The swelling is soft, doughy, and circumscribed. It is capable of being largely emptied by firm pressure, but, on the relief of the pressure, it quickly refills. The skin covering it is elevated, and presents usually some amount of bluish or purplish discoloration; the size and tint of the tumour varying in degree according to changes in the circulation of the part. If cut into, it bleeds furiously, and yet may be, in a great majority of cases, removed by incisions carried wide of its limits without any serious hæmorrhage. Sometimes the arteries leading to it become in time distinctly enlarged, tortuous, and briskly pulsating. The pulsation of these tumours is often slight, and never so full and strong as that of aneurism; but quite as distinct a bruit is often perceptible—blowing, buzzing, cooing, or loud and harsh, as the case may be. When situated on the head, the noise, always audible to the patient, constitutes the most distressing symptom. Both the pulsation and the bruit may be much modified by compression of the circulation leading to the tumour.

Venous Nœvus; Cavernous tumour; Erectile tumour; Angioma.—Venous nævus affects principally the subcutaneous tissue, although the skin covering it is apt to be involved at various points, and so to exhibit smaller or larger spots of superficial nævus. It is probably always congenital, although an opposite statement is sometimes made, very likely because its comparatively deep situation leads to its remaining long unobserved. It may be of large size at birth, and even then disposed to bleed; but oftener is small, and may not increase materially for many years. When active and growing rapidly it is often prone to bleed, at times in an alarming manner. It has a bluish or purple colour, which is perceptible through the skin even when that structure is entirely sound, especially if put firmly on the stretch. It feels soft, doughy, compressible, and often somewhat lobulated. If emptied by pressure it distends again very slowly. At times portions of it are solid, probably as the result of former inflammatory action and consequent partial cure. Thrombi or even phleboliths may now and again be felt in its substance. It may also be affected by a form of cystic degeneration. Some of the venous sinuses becoming obstructed and shut off from the circulation in the tumour, cysts are formed, which are filled either with clear or with sanguineous fluid. The erectile tissue of these tumours resembles pretty closely natural erectile tissue, such as is found in the penis, the nipple, the turkey-cock's wattles, &c. Hence they have been described under the special name of cavernous angioma. On section, they are seen to be largely made up of smooth alveoli or sinuses, lined with epithelium, bounded by tough fibrous walls, and communicating freely with one another. Through this cavernous structure there is a free circulation, for it stands intermediate between the veins and arteries, like a huge, dilated system of capillaries. Venous nævus occurs more frequently on the trunk of the body, perhaps, than the other two varieties of the disease, being often met with on the back, nates, and genital organs. It is also frequent on the head and face, and may be met with on the extremities. It is often multiple and not unfrequently hereditary. Thus, a lad lately under my care had seven venous nævi in various situations, one on the back of very large size. His mother had two. I removed two from an infant some months ago, whose grandmother had an extensive capillary nævus discolouring almost the whole skin of the right arm. As might be expected, these nævi, like the arterial, vary in size and colour with changes in the circulation of the part; and this is especially noticeable during violent exertion, and, in the infant, during straining at stool and crying.

Capillary Nævus; Mother's Mark; Port Wine or Strawberry Mark; Telangiectasis.—Capillary nævus is the most disfiguring, if the least harmful of the varieties of the disease. It occurs more frequently on the head, face, neck, shoulders, and arms than elsewhere; and consists of bright red or purple patches on the surface of the skin, only slightly elevated, but usually possessing a papillated and granular character. These appearances are occasionally interrupted by white, cicatricial-like patches—here and there in the otherwise vividly discoloured portion of skin—the result, probably, of partial spontaneous cure. The area of skin affected is sometimes very extensive, and, if on the face, necessarily produces much disfigurement. The colour varies, as in the case of other nævi, with variations of the circulation. Beyond the blemish produced, no inconvenience is usually experienced from the disease; but it is sometimes prone, without any apparent cause, to take on unhealthy ulceration; an occurrence which creates alarm, all the more that it is sure to be accompanied with more or less oozing and trickling hæmorrhage. At birth these nævi are often no larger than a pin-point, and yet may grow in a few months so as to cover a considerable patch of skin. At times, however, they spontaneously disappear or remain stationary for an indefinite period.

Diagnosis.—Arterial nævus can hardly be confounded with any other ailment. Although it has received the name of aneurism by anastomosis, because characterised by pulsation and bruit, still it is so unlike aneurism in history, character, and appearance, and will so seldom occur close to any large arterial trunk, that no confusion, as a matter of fact, has ever been noted between the two diseases. Capillary nævus may always be recognised at a glance. Venous nævus, however, from its deeper situation may occasionally (especially when entirely subcutaneous and unassociated with any superficial nævoid staining of the skin) deserve a more careful examination. Its soft compressible feeling; its usually congenital history; the fact that it can be greatly emptied by pressure, and will slowly refill when pressure is removed; the venous colour, recognisable even through the natural skin covering it, will serve to identify the disease in the great majority of cases.

There is one situation of nævus, however, in which an error of diagnosis has more than once led to a fatal result—viz., at the root of the nose. Here, on account of a deficiency in ossification of the ethmoid and frontal bones, an encephalocele may be found protruding (frontal Encephalocele), and such a tumour has more than once been ligatured or injected under the idea that a nævus was being dealt with, and, of course, with disastrous results.

In regard to the differential diagnosis of these two ailments, Mr. Jonathan Hutchinson remarks when speaking of encephalocele—"In respect to diagnosis it may be remarked that the presence at birth, the peculiar position, the somewhat lobulated surface, the fluctuation, the distention during crying, are facts which abundantly suffice. Although sometimes very florid, and at first glance like nævus, yet it may always be noticed that the florid skin is smooth and glossy, and that the vessels only cross it and by no means make up the thickness. Further, with the rarest exception, there is no true nævus structure to be found at the base of the tumour or on the surrounding skin. There is usually a double pulsation; a feeble one (often absent), which is arterial and synchronous with the pulse, and a more forcible one felt only during crying, &c., which is synchronous with expiration."*

Treatment.—As has already been hinted, there are no tumours, individual instances of which may give rise to greater perplexity in reference to treatment, than those which we are now considering. Many of them, especially such as are capillary and of small size, disappear spontaneously, while others remain stationary for years, and, if situated where clothing or hair conceals them, give rise to little annoyance. Even large nævi undergo spontaneous cure every now and again by coagulation taking place in the vessels from some accidental attack of acute inflammation. Thus, Mr. Spence relates, "a remarkable case of arterial nævus of one side of the face, in which gumboil, resulting from a carious tooth, led to inflammation and abscess of the cheek, and to obliteration of the greater portion of the nævus." But without any such obvious exciting cause a spontaneous inflammation may occur, coagulating and curing the nævus. Considerations like these make one ask oneself in each case whether active treatment must be adopted, or whether the tumour may be safely left to nature, at least for a time. The best solution of such a question will be found usually in a consideration of the size, situation, and especially the rate of growth of the tumour. If it is active it ought always to be dealt with, unless the condition of the infant is such as to forbid the necessary operation. The methods of treatment are very various. Some imitate the spontaneous cure of nævus by causing inflammation and consequent coagulation and absorption of the tumour; while others provide for its immediate extirpation, or its removal by sloughing. We shall consider them separately.

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* *Illustrations of Clinical Surgery*, vol. i., p. 6.

1. In certain cases of pulsating nævus in the head, the main arteries leading to the part have sometimes been ligatured as in the Hunterian operation for aneurism. The result has not usually been encouraging, with one exception—viz., in the case of a disease, probably of the nature of aneurism by anastomosis, which is met with in the orbit. It occurs most frequently in women, and produces protrusion of the eyeball, disturbance of vision, ectropium, unceasing noise in the head, severe pain, and marked pulsation with bruit, audible often over all parts of the head. Most of these symptoms disappear on compression of the carotid artery of the same side, and cure has now frequently followed ligature of that vessel in the neck. Electrolysis is often very successful in effecting a cure in cases of cirsoid aneurism which are not uncommon on the scalp, temples, ears, &c. It should be employed with the view of producing coagulation at the points where the large pulsating vessels enter the tumour.

2. Cases of nævus may occasionally justify the amputation of the part in which they are situated. Thus I once removed the external ear of a lady, because almost its entire bulk was the seat of a briskly pulsating arterial nævus, which made her life miserable from the constant whizzing noise produced in her head. It had been dealt with elsewhere by various methods without any permanently satisfactory result. I have also known of amputation being practised in the case of a cavernous tumour involving the entire foot of a child.

3. By far the most satisfactory and generally applicable method of treatment (except in the case of large or widely spread tumours) is excision by the knife. As already pointed out, no great hæmorrhage need be dreaded when suitable cases are dealt with; and, if the base of the tumour be sufficiently small to admit of the wound, which results from the operation, being closely stitched so as to unite by first intention, this plan of treatment ought, I believe, always to be preferred. It has the merit of being certain, of requiring no repetition, and of leaving only the very slight disfigurement of a linear cicatrix. The écraseur has been occasionally employed instead of the knife. This, however, is anything but an advantage, except in nævus of such

a vascular structure as the tongue. A portion of that organ, including the nævus, may by its means be very satisfactorily amputated. The noose of wire may be of platinum, which, after being tightened, is rendered red-hot by the action of a galvanic battery, with which it is connected, and nævoid tumours of the tongue may be excised by this means without hæmorrhage, by gradual constriction and cauterisation of the parts. Even then precautions against hæmorrhage are by no means unnecessary.

4. Strangulation by the ligature has the advantage, like excision by the knife, of certainly removing the disease without the necessity of any repetition, while it further avoids all risk of hæmorrhage. It has, on the other hand, the disadvantage of being painful, of leaving an irregular scar, of causing a good deal of feverishness and constitutional disturbance, of producing, when the slough has putrefied, more or less widespread local inflammation and, sometimes, even septic infection of the system. For this reason it is well to guard against putrefaction as far as possible. The skin covering the growth, as well as that which surrounds it, having been thoroughly washed with a powerful antiseptic lotion (say a 5 per cent. solution of carbolic acid), a double ligature of silk or fine whip cord, soaked for some time previously in the same lotion, is to be passed by means of a nævus needle * under the base of the tumour, and the noose of the ligature having been cut, each half of it is to be tied with full force and in a reef-knot on each side of the growth, so as to thoroughly embrace and strangulate it. If the extent or shape of the nævus demands the employment of two ligatures, the second one is to be passed at right angles to the first, and the nævus tied in four instead of in two portions. In effecting this, it is well to pass one needle unarmed, and, leaving it *in situ*, to pass a second armed with a thread beneath, and at right angles to it. When this second needle has been removed, the first is to be threaded and withdrawn. In this way both ligatures are placed in position without any chance of entanglement, or cutting by the sharp edges of the needles. If even more ligatures be required, they must be introduced on the same principle. Mr. Liston advised that when the skin is not affected, and the subcutaneous tumour large, the coverings of it should be reflected and then the ligature applied, so as to save as much skin as possible. It is certainly well in all cases, in order to prevent pain and inflammation of the skin, to avoid including it in the knot of the ligature. It ought to be incised before the ligatures are tied.

An antiseptic dressing may be placed over the strangulated nævus, and need not be frequently interfered with, unless discharge soaks through. If poultices are used, a mixture of linseed meal and charcoal will be found suitable for the purpose, the part being washed with Condy's fluid and water when the poultices are changed. Any simple dressing may be employed after separation is complete, and a healthy, granulating sore has formed.

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* A sharp-pointed curved needle set in a handle, and having its eye near the point.

5. Injection of the nævus, with various astringent fluids, is practised with a view of bringing about its coagulation and absorption. There are two special dangers connected with the practice—the one is sloughing, which is far from uncommon, and the other is the passage of some of the injected fluid directly into the circulation. The latter has frequently been followed by the immediate death of the child, and has occurred most often in nævi situated in the neighbourhood of the orbits. The most suitable fluids for the purpose are solutions of perchloride of iron or tannic acid, and pure carbolic acid liquefied by the addition of a few drops of water. The syringe used ought always to have a screw-piston. I have injected often with most satisfactory results by the following plan, which has been recommended by Sir Joseph Lister:—The part having been washed with carbolic lotion, a needle without any cutting edge (an ordinary darning-needle answers the purpose well) is thrust below the tumour from side to side. A stout whip-cord ligature, soaked in the solution, is then passed by means of a similar needle at right angles to the first, and having been cut, each half is tied tightly under the projecting portions of the first needle, so as to constrict the tumour thoroughly, and to bring its circulation to a standstill. Carbolic acid is now injected into the various parts of the tumour, the point of the needle being shifted about for this purpose, without ever being withdrawn. A half minim or minim only of the fluid should be thrown in at a time, so as to ensure an even distribution of it throughout the mass of the nævus. After as much has been introduced as seems desirable, ten minutes are allowed to elapse, in order to give opportunity for coagulation being as complete as possible. The needle is then withdrawn, and, after waiting a minute or two more, the threads are cut and removed. All the punctures are now to be sealed with collodion. If bleeding occurs from any of them, a little pressure with the point of a finger will arrest it, and allow of the collodion being applied. This mode of procedure has the advantage of acting powerfully on the blood while in a state of rest, and entirely gets rid of the risk of sudden death referred to above. It has been, however, in my hands, once or twice followed by sloughing. All operations by injection are apt to require repetition, sometimes more than once.

6. A very small cutaneous nævus, tending to increase, may be very

conveniently destroyed by one application of the actual cautery; but even large nævi, when, from peculiarities of shape and situation, unsuited to any of the methods of treatment already referred to, may often be cured by the use of the thermo-cautery. The point used should be a sharp one, not thicker than an ordinary probe, and while at a dull red heat, should be plunged here and there into the substance of the nævus. In this way, sloughs are produced, and foci of inflammation and coagulation established. The punctures in the skin may be sealed with collodion, or what is much better, the region may be enveloped in some antiseptic dressing (the parts having been well purified previously with an antiseptic lotion), and the injury will probably behave like a subcutaneous one. If the cautery be used too hot, brisk hæmorrhage may occur. The operation, in most cases, must be repeated. I have lately succeeded thus in almost curing (and I doubt not in the end will completely cure) a case of symmetrical nævi of the upper eyelids, of such size as to constitute a great deformity, and to interfere seriously with vision. Other means had been tried elsewhere with little benefit, and I know of no plan of treatment by which such a case could have been so satisfactorily dealt with as by this method of ignipuncture with the thermo-cautery.

7. I have already referred to one application of galvanism in the treatment of nævus—viz., the use of the galvanic écraseur in the removal of nævi of the tongue. But the galvanic current is also employed directly to the tumour with the view of inducing coagulation, and in many cases this proves highly successful. The continuous current is passed through the growth by thoroughly insulated needles, connected with a Grove's or Stöhrer's battery of the strength of 10 milliampères.

8. The seton has sometimes been employed, but I cannot think that it will often prove a desirable form of treatment. Threads, however, saturated with perchloride of iron, may, with advantage, sometimes be passed through a nævus. The operation should be performed with a perfectly round needle (*i.e.*, without any cutting edges, like a darning-needle), and the string, saturated each time with the fluid, should be drawn backwards and forwards through the various parts of the nævus. The use of a little carbolised oil and a strong needle-holder will overcome the difficulty of working with a needle without any cutting edge. The punctures had better be sealed with collodion. Very considerable coagulation and hardening often follow.

9. Various caustics have been used for the purpose of destroying small cutaneous nævi. Nitric acid, chloride of zinc, acid nitrate of mercury, &c., have been used for the purpose. Within recent years,

Dr. B. W. Richardson has recommended a solution of sodium ethylate* as a highly suitable caustic. He claims for it that it causes little pain and leaves a very slight mark. It must always be applied to the surface of the skin with a glass rod, and the addition of an alcoholic solution of opium is said to lessen the pain of an application.

10. Vaccination may be practised over or beside a small nævus with the prospect of the resulting inflammation effecting a cure. The permanent vaccine mark, however, restricts this mode of treatment to such situations as are covered by hair or clothing.

11. Subcutaneous laceration and breaking up of the nævoid tissue by means of the cataract-needle (just as division of a soft cataract is effected) has been found sometimes to lead to coagulation and absorption of the tumour.

12. Multiple punctures and scarifications of port-wine stains have been employed, with a view of effecting division at many points of the small vessels concerned, as well as of exciting a traumatic inflammation. For the more exact application of such a procedure, Mr. Balmanno Squire some years ago devised a multiple scarifier, by means of which a number of parallel incisions (about $\frac{1}{16}$th of an inch apart) can be made through the entire thickness of the skin at one application (see Fig. 36). After these are healed (in three or four days), a second set of parallel incisions is made obliquely to the first set, and so on until the whole area of the disfiguring mark is overtaken. The skin is frozen with ether spray to avoid pain. The method, though attractive in theory, does not seem to have been widely followed.

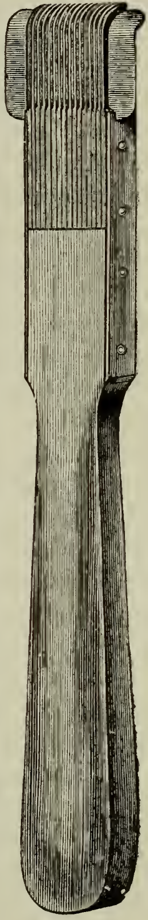
Fig. 36.

EPITHELIOMA.

Syn.—*Epithelial Cancer*—*Rodent Ulcer.*

By H. C. Cameron, M.D.

Although often less malignant than the other forms of cancer, epithelioma possesses in common with them this peculiarity, that, from the day it appears, it sets itself without pause or cessation, except when occasionally checked by treatment, to compass the destruction of the patient. No matter whether its first appearance be in an organ in such intimate relation with the very wheels of life as the larynx, or in a situation so remote from them as the skin covering the distal phalanx of a toe, it opens, from the date of its development (with more advantage no doubt in the one case than in the other), an unremitting attack on the patient's life. It is this merciless tendency sooner or later towards a fatal issue, independently of the accident of situation, which after all is the true distinguishing characteristic of a malignant tumour or ulcer as compared with a simple one. It is this which constitutes the essence of what we express clinically by the term malignancy, and epithelioma is to be classed amongst the carcinomatous group of malignant tumours.

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* For mode of preparation see *Lancet*, 1875, vol. ii., p. 655.

But, while this is true, it is to be equally remembered that different examples of epithelioma vary very much in degree of malignancy; much more so than is the case with any of the other forms of cancer. One may exist for half a lifetime, accompanied with much destruction of tissue, while life continues to be maintained and even enjoyed (Rodent ulcer); another kills its victim in the course of a few months. One has no apparent tendency to implicate the lymphatic glands, even sometimes although it may show a determined disposition to local recurrence after removal; another early affects them. One is permanently got rid of after free removal; another returns before the operation wound is soundly healed. We shall best illustrate these differences by referring to the characters of the disease in detail.

Seats.—It commences in or under skin or mucous membrane, and very often in situations where these meet at the apertures of the various mucous canals. It is met with commonly on all parts of the face, but with especial frequency on the lower lip, the sides of the nose, and the neighbourhood of the orbits. The upper lip is very rarely attacked except by extension from the lower, round one or other commissure, and even this does not often happen. The tongue, floor of the mouth, buccal mucous membrane, gums, tonsils, antrum, palate, and external ear are other common situations of the disease in the head. Its other favourite seats may be enumerated as follows:—The larynx, œsophagus, vulva, uterus, penis, scrotum, bladder, anus, and any part of the general tegumentary covering of the body, but especially the skin of the hands and feet of old people. It often originates at the site of moles, and in old cicatrices both of skin and mucous membrane, and I have more than once seen it develop in connection with a long-standing fistula in ano, and once at the orifice of a sinus leading down to a very old sequestrum in the head of the tibia.

Age, Sex, and Predisposing Causes.—The disease is seldom met with before middle life, and is most common in advanced age. It is said to be more frequent in men than women, and in some situations this is remarkably true. Thus, cancer of the lower lip, which is so frequent in men, is almost unknown in women. Hereditary predisposition is a recognised factor in the production of some cases; and in this matter too, according to some observers, it betrays its affinity with other forms of malignant affection. Thus a man may, in late life, develop epithelioma of the lip whose mother may have died of scirrhus of the mamma, or whose child may have succumbed to sarcoma of one of the long bones. It has been with myself, as well as with others, a matter of frequent remark that in our Glasgow hospitals a very large number of cases of epithelioma, especially of the face and mouth, occur in poor elderly people of both sexes from the Hebrides and Western Highlands of Scotland. Possibly the constant irritation to which these parts are subjected by the patients living in peat-smoke (often with no better chimney than a hole in the roof) may account for this liability, as well as for their proneness to granular lids;* and, where a distinct cause for the production of a disease is in operation anywhere for a few generations, hereditary predisposition steps in to strengthen and confirm its hold on the locality. Within the last few weeks I saw a very poor old woman from one of the Western Islands with extensive epithelioma of the face, and confirmed granular ophthalmia. Chronic irritation of any sort, indeed, must be regarded as a strong predisposing cause of the disease. Epithelioma of the scrotum was first recognised by Pott as frequently caused in chimney-sweeps by a somewhat similar sort of irritation—viz., that of soot, which was allowed to lodge in the rugæ of the scrotum. He tells us that, in his day, it was known in the trade by the name of "soot-wort," and it is now familiarly known to surgeons as "chimney-sweep's cancer." Of late years it has been found that the labourers in paraffin works are also frequently affected with the same disease, and I have had occasion to operate on two or three cases occurring in men who were employed in a paraffin refinery in the vicinity of Glasgow. The habit of smoking tobacco, especially in short and hot clay-pipes, is a common forerunner of epithelioma of the lower lip, and, to some extent, this may explain its markedly greater prevalence in men than women. As possibly a slight corroboration of this, I may mention that two old Irish women, whom I have seen affected with the disease, were both hard smokers of short, blackened clay-pipes. Chronic pruritus of many years' duration of the anus or vulva is often followed by epithelioma of those parts. Congenital phymosis, with consequent retention of decomposing glandular secretions and frequently recurring irritation, is a recognised cause of epithelial cancer of the penis; while, conversely, the observation has been made that Jews, probably in consequence of the rite of circumcision, are rarely the subjects of this form of the disease. Broken and roughened teeth, patches of tylosis linguæ (Leukaplakia linguæ—Ichthyosis linguæ), burns, repeated bites, and chronic syphilitic sores of the tongue, have all been noted as immediately exciting causes of epithelial cancer of that organ. As stated above, the disease often makes its appearance on the surface of old cicatrices, especially, perhaps, when their situation renders them subject to friction or other irritation. I have twice amputated the leg in middle-aged men on account of epithelial ulcers, which had formed on extensive and hard cicatrices, adherent to the os calcis, and dating, in both cases, from early childhood; while the largest epitheliomatous ulcer I ever saw was one extending almost from the ankle to the knee of a man of fifty, the skin of whose leg had been destroyed by scalding in early boyhood.

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* As I have heard suggested by Dr. Thos. Reid of the Glasgow Eye Infirmary.

Clinical Characters.—The appearances presented by the disease are very various, but it is generally characterised by ulceration. It may begin as a soft tubercle or small wart, and may so remain for a considerable time; eventually, however, it extends and ulcerates. Or it may originate as a small crack, chap, or fissure. In some instances an ulcer, with a surrounding induration so limited and trifling as hardly to be perceptible, may to all appearance constitute the whole disease; while, in other instances (typically in the lower lip and tongue), under and around the ulcer, which may be very insignificant, there is an amount of hardness and induration fairly deserving the name of tumour. In the former of these two varieties, when there appears to be a sore and nothing more, the disease is superficial, and usually tends to be comparatively chronic in its course; not early affecting the lymphatic glands, and often, for a long time, in no way disturbing the general health. In the latter, the cancer is of the infiltrating variety, and the hardness depends upon the fact that the rapidly proliferating epithelial elements of the disease have infiltrated the tissues around, like a parasite or ferment, and have produced the usual well-known pathological changes in the part. This form of the disease is altogether more malignant than the others, spreading more quickly, leading sooner to implication of the lymphatic system, showing a much greater tendency, as might be expected, to recurrence after removal, and rapidly leading to a cachectic state of the system and to death. But whatever degree of malignancy may characterise any particular epithelioma, sooner or later its tendency is to extend to and destroy the soft parts around, to invade the deeper structures, eroding and destroying subjacent bone, as well as soft tissues, and like the other cancers, except in the case of the true rodent ulcer, reproducing itself in, and causing tumours of, the lymphatic glands, and chiefly those which lie in the course of the lymphatic vessels between the seat of the disease and the thoracic duct. These may or may not have time to break out in fresh ulcers, before the cachexia and exhaustion consequent on the disease put an end to the patient's life. Dissemination in internal organs is rare, but secondary tumours have been found in the lungs, liver, kidneys, and other organs.

Rodent or Jacob's ulcer was, for a long time after it was first described, considered a form of ulceration not cancerous in character. It seems to be conceded by all observers now, however, that it really is a form of epithelioma, although worthy of being classed as a separate variety, both from its histological and clinical peculiarities. It usually begins as a small tubercle in the skin, which may exist for some time before ulceration takes place. It occurs most frequently, though not invariably, in the upper part of the face, is very slow in its course, and is usually productive of little pain, no cachexia, and no glandular enlargement or internal visceral deposit. It is met with in both sexes with equal frequency, and commonly at about fifty or sixty years of age. The ulcer itself is superficial with little or no underlying induration, but with a selvedge-like edge, which is "elevated, rounded, firm, and pearly-looking, with a dilated vessel coursing over it here and there" (*M'Call Anderson*). Its progress is slow but unrelenting, and its ravages in the end often frightful. Originating in an eyelid, it will destroy both upper and lower eyelids, the eyeball, and the bones of the orbit, so that the pulsations of the brain may even be visible. In the same way the bones of the face may be destroyed, the antrum opened, and the cavity of the mouth and tongue attacked.

Diagnosis.—The diagnosis of epithelioma, in its later stages, when lymphatic enlargement and cachexia are present, is a matter usually of almost absolute certainty. Nor does it present any very serious difficulty in most situations, even at first, if we except the tongue. Whatever its form at first, it is usually eventually characterised by an unhealthy aspect, with foul discharge, a more or less hard, pearly-looking, everted, abrupt, or curling border, and a somewhat concave and irregular surface, often villous, papillated, and warty in appearance. At times an imperfect attempt at cicatrisation may be observable here and there on such an ulcerated surface, but it never closely resembles a healthy granulating sore. Even when its appearances, in any particular case, are not too characteristic, it may be differentiated from lupous, syphilitic, strumous, and other ulcerations by considerations in regard to its situation, duration, the character and history of its progress, and the patient's age and habits.

"The diagnosis of rodent ulcer is usually easy. An ulcer with a hard sinuous edge situated on some part of the upper two-thirds of the face, of several, or perhaps many, years' duration, almost painless, and occurring in a middle-aged person of fair health, and without enlarged glands—such a sore is almost certain to be of the rodent type." – *Jonathan Hutchinson.*

Treatment.—The treatment of this disease must be addressed to the affected part, and, when it is at all practicable, an early and free removal by the knife is very much the safest, least painful, and most satisfactory mode of treatment. Small superficial epitheliomatous ulcers of the non-infiltrating variety, with little surrounding and underlying induration,* may be dealt with successfully in various ways. Professor M'Call Anderson has found benefit from painting them over with Fowler's solution,† or from dusting them daily with aristol; while Mr. Thomas Smith, of London, has lately stated that he has seen such ulcers heal when dressed with a saturated solution of salicylic acid, and this has been confirmed by Dr. Anderson. I have had no experience of either of these remedies. Various caustics are held in repute as means of extirpating the disease. Arsenical paste is a favourite with many cancer-curers; but, as it is liable to be absorbed and so to cause poisoning, only a limited surface can be dealt with at once. A paste made of chloride of zinc, with 1 to 4 parts of flour moistened with water, is a useful, if very painful, caustic for this purpose. Sulphuric acid, potassa fusa, acid nitrate of mercury, Vienna paste, finely-powdered asbestos mixed with three times its weight of strong sulphuric acid, have all also been recommended and frequently used. The employment of all these substances, however, entails more or less continued suffering, and is tedious in the accomplishment of its object, and none of them can be absolutely controlled as regards the amount of tissue destroyed. The case is different with the knife. It is rapid and, with anæsthesia, inflicts no suffering worthy of consideration, while just as much tissue as the surgeon desires is removed, no more and no less. In the case of ulcers with surrounding induration, the knife must be carried widely beyond the limits of it; and, in cases where this is impossible, as well as in those where the lymphatic glands are already extensively affected, no operation should be undertaken. Recurrence after operation may take place in the scar, or still oftener in the lymphatic glands. It may declare itself before the wound is healed, or, as in one case mentioned by Paget, not till after the lapse of thirty years.

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* Probably commencing rodent ulcers.

† The part is first thoroughly cleansed of secretion and scabs, and then the surface is painted with a few drops of the solution. The application may be repeated daily, or whenever the irritation from the previous application has subsided.

III. HÆMORRHAGES.

Cutaneous hæmorrhages are of frequent occurrence, and recognise a great variety of causes: in most cases the blood-vessels—generally the capillaries—are ruptured, and the blood escapes into the meshes of the skin, but sometimes the blood-corpuscles traverse the walls of the vessels which themselves remain intact. They are said to be either idiopathic or symptomatic. We have instances of the latter in the purpurous spots which frequently appear on the lower extremities in connection with varicose veins, or with interference with the free return of venous blood as the result of pressure upon the venous trunks by tumours and the like, and in the cutaneous hæmorrhages resulting from altered conditions of the blood, as in jaundice, scurvy, phosphorus poisoning, and the exanthemata (Typhus, Variola, &c.) All these forms of hæmorrhage are mere symptoms or complications of other diseases, and therefore need not be further alluded to in this place, so that our attention will now be directed to the former class—the so-called *Idiopathic hæmorrhages.* These are purpura and hæmidrosis.

PURPURA.

Syn.—*Morbus maculosus Werlhofii.*

The term purpura (from πορφύρα, purple) refers to an affection of doubtful nature, in which there is an escape of blood into the substance of the skin, or subcutaneous cellular tissue, or both, giving rise to purple spots or patches of various sizes and shapes, and which have therefore received different names. When they are rounded, and about the size of the head of a pin, they are often termed stigmata; when of the size of split-peas, petechiæ; when they assume the form of streaks, like the marks left by the lash of a whip, vibices; when they are in large patches of irregular shape, ecchymoses; and when the blood accumulates in the subcutaneous cellular tissue, so as to form distinct swellings, hæmatomata, or blood-cysts. The colour of the spots and patches varies according to their duration, and, as absorption takes place, the same shades are observed as in the case of a black eye, the last tint to be discerned being a dirty yellow, although in severe cases there may be more or less permanent pigmentation, owing to the presence of hæmatoidin. The duration of each spot is from a few days to two or three weeks, but the eruption may last for months, or even indefinitely, owing to successive crops which may follow one another at considerable intervals, or so rapidly that every shade of colour—purple, brown, green, and yellow—may be exemplified on the body at one and the same time. The patient suffers no inconvenience from these spots, and, as there is usually no elevation, he is unaware of their presence unless he sees them. In exceptional cases the purpura spots are preceded by papular elevations (P. papulosa—Lichen lividus), which are at first inflammatory and only secondarily hæmorrhagic, the purpura character remaining for sometime after the elevation has subsided; and in rarer cases bullæ make their appearance here and there, which are usually filled with clear serum, although the contents may be more or less hæmorrhagic.

Not unfrequently the cutaneous manifestations, which are usually symmetrical, constitute the only symptoms, and the affection is only discovered accidentally, but there may be slight constitutional disturbance—such as languor and disinclination for exertion, defective appetite, and very slight febrile reaction—before and during the appearance of each crop of eruption, which is apt to appear suddenly, often in the course of a single night.

Any part of the skin may be involved, but the extremities, especially the legs, are most frequently attacked, while the face usually escapes. Such is a brief outline of the usual form which this curious affection assumes: to it the term *Purpura simplex* has been given, which must be distinguished from *Purpura hæmorrhagica* (Morbus maculosus Werlhofii—land scurvy). The latter differs from the former in degree rather than in nature, for it is a much more severe, indeed a very dangerous, affection, and one which too often proves fatal. It is much more acute, and sets in more suddenly; the constitutional symptoms are more marked; the cutaneous manifestations are, as a rule, more pronounced; and hæmorrhages from the mucous membranes, such as the nose, mouth, stomach, bowels, urinary organs, or lungs, are constant features. These patients rapidly become anæmic, are prostrated from loss of blood, and are apt to die in a state of collapse, the fatal issue being sometimes preceded by the development of typhoid symptoms. The following case illustrates this variety of purpura, and is worthy of note, owing to the rapidity with which the disease proved fatal:—

A mining engineer, aged twenty-seven, who had previously enjoyed good health, but who had lost a brother of phthisis and a sister of "softening of the brain," began to complain of debility, "weak stomach," and constipation, as the result, it was supposed, of hard work and irregularity as to his meals. His symptoms did not improve under treatment, and he was therefore sent to Arran for change of air. On Friday, the 16th of August, while there, his eye became ecchymosed, when he immediately returned home. When I saw him on Monday, the 19th, copious extravasation of blood was observed beneath the conjunctivæ and around the eyes, while small purpuric spots were detected upon the legs, which had only appeared upon the morning of my visit. His gums were bleeding, he had slight hæmorrhage from the stomach and bowels, and the urine was bloody. Two days afterwards he died. Dr. Adam wrote me as follows with regard to him :—"After he got the castor oil and turpentine, the hæmorrhage from the kidneys and mouth became much less, but never altogether ceased from the stomach till a few hours before death, up to which time the retching and vomiting of altered blood were very persistent, and, although stimulants were given very freely, exhaustion came gradually on, accompanied by delirium."

There is little known of a positive nature with regard to the *ætiology* and pathology of purpura, but this at all events is certain, that it depends upon a variety of causes—so much so, that the opinion is very prevalent that purpura should be regarded rather in the light of a symptom of varied morbid states than as a substantive affection.

It is met with in both sexes and at all ages, but seems to be rather more frequent in early adult life, and in females than in males. It may occur in those who are apparently strong and vigorous and even plethoric, or who, on the contrary, are weak and anæmic; it is a sporadic affection, and the predisposition to it is in no sense hereditary, but it is very apt to recur in the same individual. There can be little doubt, however, that it is sometimes dependent upon derangement of the sympathetic nervous system of an undefined nature (Neurotic Purpura). Thus interesting cases have been recorded of the occurrence of purpura after extirpation of the sympathetic ganglia. Dr. Weir Mitchell and others have observed cases in which attacks of neuralgia were associated with purpuric spots confined to the seats of the pain; and many are familiar with the ecchymoses which occasionally accompany and follow violent and prolonged paroxysms of pain in locomotor ataxy, and which generally follow the course of the cutaneous nerves.*

It is also well known that certain medicines (such as iodide of potassium, quinine, salicylic acid, and hydrate of chloral) in some persons—in virtue of some peculiar idiosyncrasy—are capable of inducing it; while it is equally certain that derangement of the digestive organs is frequently at the root of it.

In a few cases, changes in the coats of the blood-vessels in the neighbourhood of the hæmorrhagic patches, of an inflammatory or lardaceous† nature, have been discovered; while in others there has been plugging of vessels of small size by emboli or thrombi. And in an interesting case, recorded by Dr. Wm. Russell of Carlisle, Mr. Watson Cheyne found many of the capillaries around the hæmorrhages distended and plugged by small bacilli, and even ruptured, with colonies of them among the effused blood.*

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* See article by M. Strauss, "Des Ecchymoses Tabétiques à la Suite des Crises de Douleurs Fulgurantes," *Archives de Neurologie*, 1881.

† See Case recorded by Dr. Wilson Fox in *British and Foreign Med. Chir. Review*, 1865, p. 480.

Dr. Stephen Mackenzie, in his admirable address at the Meeting of the British Medical Association at Liverpool in 1883, proposed the following classification of the conditions under which purpura occurs. I quote his own words:—†

"1, Vascular Purpura; 2, Toxic Purpura; 3, Mechanical Purpura; 4, Neurotic Purpura.

"Under the head of *Vascular Purpura,* I would place all cases in which there is some known or supposed primary blood-disorder, so that this group would include the specific blood-diseases; diseases in which the blood-disorder seems primary or most important, as profound anæmia, leucocythæmia; conditions in which some constituent or constituents of the blood are wanting, as scurvy; and conditions in which some constituent is present in excess, or superadded, as bile, urinary constituents, &c.

"In the category of *Toxic Purpura* (Drug-Purpura), I would place all cases in which the purpura arises from adventitious matters entering the system, such as phosphorus, mercury, mineral acids, salicylic acid, quinine, iodides, venom. We do not know the exact mechanism by which the purpura is brought about in this group; but it is clearly advantageous, clinically, to keep them apart, though logically they may be said to belong to the hæmic group.

"Under the third variety, *purpura from mechanical causes,* we should place the cases of purpura arising in connection with heart-disease, a feeble circulation, from varicose veins or paroxysms of coughing, as in whooping-cough, from thrombosis of venous trunks, and, probably, senile purpura.

"Into the last category, *purpura of nervous origin,* would fall the cases in which the nervous system is primarily at fault, and thus it would include cases of tabetic purpura, purpura in connection with neuralgia and with disease of the nervous centres, purpura urticans, and neurotic eruptions (as herpes) becoming hæmorrhagic."

Diagnosis.—There should be no difficulty in distingishing inflammatory lesions of the skin from purpura, but, as such mistakes are not uncommon, the differential diagnosis is appended in the following table:—

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* See *Brit. Med. Journ.*, Sept. 1, 1883, p. 416.

† *Brit. Med. Journ.*, Sept. 1, 1883, p. 412.

Purpura spots.	Inflammatory spots.
1. With the exception above mentioned, there is no elevation of the surface.	1. Usually more or less elevated.
2. Unaccompanied by pain, heat, itching, or sensation of any kind.	2. Pain, heat, or itching usually present at some period.
3. Unaffected by pressure.	3. Colour temporarily disappears on pressure.
4. Not followed by desquamation.	4. Usually more or less desquamation.

It must, however, be remembered that in those rare cases of purpura hæmorrhagica, in which there are extensive extravasations of blood into the subcutaneous cellular tissue (hæmatomata), inflammation may be superadded, when, of course, redness, swelling, pain, &c., will be present.

Purpura spots may be mistaken for flea-bites, but in that case the eruption would be principally observed where the underclothing is thrown into folds, and closely embraces the body; and punctiform spots of *uniform* size, the result of extravasated blood from the bite of the parasite, would be observed, which, in the early stage, are surrounded by bright red areolæ, disappearing on pressure. We should also look for the parasite or its fæces in the shape of minute dark brown specks on the linen, &c.

The following table will enable the reader to distinguish purpura from scurvy:—

Purpura.	Scurvy.
1. Generally a sporadic affection.	1. Generally endemic or epidemic, owing to many persons usually living under the same hygenic conditions.
2. Though favoured by irregularities of diet, has no connection with a deficiency of fresh vegetables.	2. Diet deficient in fresh vegetables or some substitute for them.
3. Sets in rather suddenly, and not preceded by manifest ill-health as a rule.	3. Sets in slowly and insiduously after a varying period of debility.
4. Patient has a comparatively healthy appearance, unless the disease is the result of long-continued or profuse hæmorrhage.	4. Peculiar, dirty, earthy pallor of countenance.

5. Gums healthy.	5. Gums swelled, spongy, and tending to bleed.
6. No painful swellings of the joints or other parts.	6. Painful hard swellings at the flexures of the joints (especially the ham and elbow), and beneath the periosteum of the tibiæ, common.
7. Hæmorrhages from the mucous surfaces common, into the serous cavities more rare.	7. Hæmorrhage into the serous cavities (pleuræ, pericardium, &c.) more frequent than from the mucous surfaces.

Pernicious anæmia, accompanied by hæmorrhages, may be mistaken for purpura, but in the former the hæmorrhagic symptoms are secondary to well-marked manifestations of anæmia, while in purpura hæmorrhagica the anæmia is secondary to, and consequent upon, the hæmorrhages.

Leucocythæmia cannot be confounded with purpura, if we bear in mind that in the former the spleen or lymphatic glands, or both, are enlarged, and that in all cases there is a marked increase in the number of the white corpuscles of the blood, easily discovered by microscopic examination.

Treatment.—In all cases, especially in purpura hæmorrhagica, the patient should be kept at rest in bed; all excitement should be avoided; the apartment should be cool; and the diet light but nutritious, the food and drink being iced when hæmorrhage is present, unless the patient is in a state of collapse. The general health should receive our most serious attention, and any evidences of digestive derangement should be corrected on general principles. If, apart from the purpura, there are no signs of derangement of the general health—or if these have been removed—we must content ourselves with treating the hæmorrhagic condition empirically, seeing that we are so ignorant of its real nature. Such remedies as quinine, oil of turpentine, ergot, tincture of the muriate of iron, acetate of lead, or dilute sulphuric acid in ordinary medicinal doses, from three to six times a day, may be tried, but without any certainty of success. In purpura hæmorrhagica, we are most likely to arrest the disease by the subcutaneous injection of 5 grains of ergotine, mixed with 10 minims of distilled water, once, twice, or even three times a day, or by the administration of oil of turpentine: some recommend that the latter should be given in ʒi doses every three hours, while others approve of the administration of ℥ss, mixed with an equal quantity of castor oil, given either by the mouth or rectum.

The local treatment of hæmorrhages from the mucous surfaces must be conducted upon the same principle as when they occur from other causes. When the loss of blood has been very profuse, and the exhaustion of the patient is extreme, transfusion of blood may be resorted to, although the results hitherto have not been encouraging.

During recovery from the more severe attacks of purpura, tonics, such as quinine, iron, and arsenic, with nourishing food and change of air, are to be recommended.

PURPURA RHEUMATICA.

Syn.—*Peliosis rheumatica.*

The affection to which the term peliosis rheumatica has been given by Schönlein, and which is also named purpura rheumatica, is supposed by some to be a mere variety of purpura. It is generally met with in young persons, or, at all events, before the age of thirty years, and in those who have apparently been previously in good health. The first symptom usually complained of is a painful affection of the joints, especially of the ankles and knees, accompanied at times with more or less swelling and redness, and generally with slight fever. Within a few days, numerous livid or blackish spots, the result of extravasation of blood into the corium, make their appearance upon the skin—most frequently upon the extremities, especially the legs, and near the joints affected. These vary in size and shape, but generally they are rounded, and from the size of a pin-head (stigmata) to that of a split-pea (petechiæ), although occasionally they are much larger. When the cutaneous manifestations are fully developed, the joint-affection and feverishness usually subside; and then the spots pass through the same stages as in the case of a black eye, with which most of us are familiar either in our own persons, or in that of our friends—so that, within a week or two, all the symptoms have disappeared. The disease is, however, too often kept up, owing to the development of successive crops of hæmorrhagic spots, each crop being accompanied by a recurrence of the fever and the joint affection. The new crop may appear before the old one has faded away, or there may be a variable interval of complete immunity between each paroxysm, so that the whole duration of the disease may be from weeks to months, or even years. A couple of years ago a case of exceptional duration came under my care in the Western Infirmary of Glasgow, in the person of a servant girl, fifteen years of age, who had suffered more or less from it for eight years. This, however, is exceptional.

The above symptoms are well illustrated by the case of a girl six years of age, who is at present under observation. About fifteen months ago this little girl's mother noticed a rash, which came out at night and disappeared in the morning—on the calves of the legs at first, but gradually extending to the thighs and arms as well, and which she likened to that of measles or scarlet fever. Three months after this, she observed that, when it faded in the morning, it left bluish-black blotches behind, which disappeared more slowly. For the last six months, swelling and pain in her ankles, knees, wrists, and fingers have preceded each fresh crop of eruption.

For some time she has been subject to an eczematous eruption at the back of the head, accompanied by slight enlargement of the neighbouring glands. Shortly before the appearance of the blotches above referred to, her mother noticed that she lost her colour and became very much thinner; and at times, for a day or two, she seems to have been bilious and yellow, and to have complained of pain in her belly. With these exceptions, however, she was a very healthy child.

Since coming under observation, she has exhibited several crops of eruption, each preceded by some pain and swelling in the ankles and knees, and by slight fever; and the spots are situated mainly upon the lower extremities, particularly below the knees. The skin of the affected parts is quite smooth, there being no elevation; and there is no itching or disagreeable sensation of any sort, so that the child could not tell that there was anything wrong if she did not see the skin. The spots are at present violet in tint, are mostly rounded, and from the size of a pin-head to that of a split-pea; but there are a few larger blotches, as large as the thumb-nail, of irregular outline. They do not fade in the least on pressure.

This disease is sometimes complicated with the development of bullæ (blebs), which is not surprising, as the state of system favouring the occurrence of extravasation of blood should likewise be favourable to the accumulation beneath the skin of the serum of the blood (Purpura pemphigoides). The following case illustrates this complication:—Martha B. M., aged twenty-four, came for advice on January 13, 1869, on account of an affection of the lower extremities of three months' duration. At that time, round red spots, for the most part the size of a fourpenny-piece, made their appearance; the next day they assumed a bluish tint, and on the third disappeared, leaving yellowish stains. On the fourth day a fresh crop was observed which ran the same course, and was succeeded by successive outbreaks up to the time of her coming to me. When these symptoms first appeared, they were accompanied by great swelling of the ankles, with severe aching pain in them. At the same time, a large bulla, about the size of a half-penny, formed on the outer side of the right ankle. About a fortnight previous to my seeing her, a similar bulla was detected on the inside of the same leg. The remains of this bulla were still apparent, and numerous purpuric spots, varying in size from that of a pea to a sixpence, and of a reddish, livid, or yellowish tint, were scattered over both lower extremities. The veins were not varicose. She seemed in pretty good health; her gums were healthy; she had always had plenty of food of good quality, and had never before suffered from rheumatism. The treatment consisted of 10 drops of turpentine on sugar three times a day, with occasional doses of castor oil, which had an immediate effect upon the disease; but it was two months before all tendency to the development of purpuric spots had disappeared; and for some time she was troubled with an ulcer, which formed in the cite of the last bulla, as the result of injudicious local applications.

It sometimes happens that the extravasations of blood are preceded by the development of little solid elevations or papules (Purpura papulosa), and this seems to correspond with the eruption described by Willan under the name lichen lividus. The following case illustrates this variety, as well as its complication with bullæ and œdema:—On December 9, 1868, I was requested to see, with Dr. S. J. Moore, a stout healthy-looking gentleman, who "had never had a day's illness in his life," but who was interested in, and probably excited by, the municipal elections, which at that time were pending. For several weeks he had complained of pains, or rather, perhaps, of weakness in his joints, especially those of the lower extremities; but his illness, which was accompanied by febrile symptoms, set in decidedly only a few days before I saw him. His tongue was moist and not much coated; his appetite fair; his bowels had been freely opened by medicine, and his urine, which previously had been scanty and loaded with lithates, was clear and of fair amount, under the influence of acetate of potash and colchicum. His pulse was 120, and rather feeble, but its rapidity was out of proportion to the extent of the fever. The lower extremities were markedly œdematous. There was swelling around some of the joints, and a feeling of stiffness rather than of pain in them, which was attributed to the swelling. Three morbid elements were observed on the skin—viz., purpurous spots, a papular eruption, and bullæ. The first varied in size from mere points to ecchymoses the size of the palm, and for the most part round. The greater number of the small ones constituted apparently the second stage of the papular eruption; and on the back, where the latter were most abundant, the transition from papules to purpurous spots was observed—that is to say, papules were observed whose elevation was subsiding, and whose redness only partially disappeared on pressure. Most, if not all, of the large ecchymoses occupied the seats of previous bullæ, which varied in size from that of a split-pea to a goose's egg, and which, when at their height, were fully distended with clear serum. The black purpuric patches, covered by the flaccid envelopes of the bullæ after the serum had escaped, looked very like patches of skin which had mortified. The bullæ were most abundant on the legs and buttocks, and the cutaneous manifestations had no special tendency, such as is often observed, to implicate the skin around the joints. The acetate of potash which Dr. Moore had prescribed was continued, and purgative doses of castor oil and turpentine were recommended, along with light nourishing food. The patient made a good recovery.

There is considerable doubt as to the nature of this interesting affection. That the disease is sometimes associated with heart disease and with rheumatism is in favour of its rheumatic nature. A mechanic, aged twenty, came under my care on January 5th, 1887. At the age of ten he had inflammation of the lungs, at fifteen pleurisy, and at eighteen rheumatic fever. A week before I saw him he felt little spots on the arms and legs, and, on looking at them, found that they were livid. A few days later he complained of pains in his knees for a few days, and a swelling of a red colour appeared on the outer aspect of the right ankle, which developed into a bulla the size of an egg (P. pemphigoides). On admission petechiæ were present on the legs—those on the arms had disappeared—and there was a sloughing ulcer where the bulla had been, as the result of improper applications. The petechiæ gradually subsided, but a new crop appeared a few days after he was allowed to get up. He had well-marked mitral regurgitation, with dilated hypertrophy of the left ventricle.

The fact that each crop of eruption is apt to be preceded by pains in the joints is also adduced as evidence of the rheumatic basis of the affection, although it might be argued that the painful affection of the joints in purpura rheumatica is similar to the aches and pains often experienced at the onset of some of the specific fevers. There can be no doubt, however, that, just as in the case of rheumatism, the disease is apt to be associated with derangement of the digestive organs, and with nervous debility.

In our **treatment** of it, therefore, we must pay great attention to the general health, and *especially to the state of the digestive organs*, rectifying, by means of careful dieting and medicine, any derangement which may be present. When this has been done, and the affection persists, we may try a course of turpentine (in doses of 10 to 30 minims on sugar three times a day), or of liquid extract of ergot (half a drachm to a drachm every four hours), on the principle of contracting the small blood-vessels of the skin. In very chronic cases, arsenic may be administered, either internally or by subcutaneous injection. From this, it will be seen that we do not agree with Hebra, who wrote:— "We have no means either of shortening its course, or of preventing the possibility of its ending in death. . . . And, since the pains experienced demand some treatment, even before a diagnosis can be made, there is no doubt that, in every case, something will be prescribed by the physician, and as little that the subsidence of the pains which follows will be regarded as the effect of the prescription." *

PURPURA TUBERCULOSA.

Under this head a case, which I met with some years ago, may be mentioned of a very different nature from the forms of purpura already described, but which it would be difficult otherwise to classify. It may with equal propriety be termed purpura verrucosa, or, as suggested by my late colleague, Dr. A. B. Buchanan, who saw it along with me, P. hypertrophica. The patient was a woman sixty-six years of age, who had formerly been in service, whose family history was good, and who had previously enjoyed excellent health. Four months prior to my seeing her, as the result, it was supposed, of poor fare, she began to complain of pain and swelling of the right foot, shortly after which slightly-elevated livid spots, about the size of pin-heads, made their appearance on the thigh. These rapidly increased in number and in size until many of them became as large and as elevated as beans, especially on the inner and posterior aspects of the thigh. In these situations the surface of the patches, which were blackish, gradually assumed a distinctly warty appearance and feeling. At this time, too, the whole limb became thicker, so that its diameter was about a half greater than that of the left. This increase was, in the foot, principally the result of œdema; but in the leg and thigh it was mainly, if not entirely, due to induration of the cellular tissue. When I saw the patient this induration was not limited to the limb, but implicated likewise the right side of the abdominal parietes and the right breast, which was firm, round, and plump, while the left was flabby, and about one-third the size. The left thigh was at this time affected similarly to the right, but to a much slighter extent. The legs were quite free of eruption. She complained of neither pain, itching, nor heat; but on placing the hand upon the eruption, especially upon the warty part, it felt much warmer than the healthy skin. (The temperature was one degree higher than on the healthy skin.) The right limb felt numb and weak, and she was confined to bed owing to the uneasiness experienced in sitting. She was thin, but not more so than many

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* "On Diseases of the Skin," by Ferdinand Hebra, M.D. *New Sydenham Society's translation*, vol. ii., p. 423. 1868.

people of her age; her appetite was bad, and her bowels exceedingly costive, as the result probably of the confinement in bed. Otherwise she appeared well, and was very cheery. She gradually sank, three months after I first saw her, and seven months from the commencement of the disease, suppuration having occurred shortly before death at those parts which were in contact with the bed.

HÆMIDROSIS.

Syn.—*Ephidrosis cruenta—Bloody Sweat.*

It is well known that discharges of blood from wounds, abrasions, and ulcers of the skin, especially in connection with menstruation, are by no means uncommon; indeed, innumerable examples are to be found scattered through the medical literature of this and other countries; but cases in which the sanguineous flow is altogether independent of any pre-existing lesion are exceedingly rare.

The main features of this curious and interesting complaint will probably be best impressed upon the mind by giving a few illustrative cases.

On the 5th of May, 1866, on the recommendation of Dr. J. Lindsay Mason, of Ayr, I was consulted with regard to a young lady, who, although hardly fifteen years of age, had the appearance of being a couple of years older. I am indebted to Dr. Mason's description for many of the details which follow.

Menstruation became fully established at the early age of eight, and continued regularly until she was eleven years old, when it ceased entirely. At the age of thirteen it reappeared, and continued normally until the middle of February, 1865, when it again became irregular, and about this time Mr. Haldan, of Ayr, was requested to see her on account of "a large abrasion of the cuticle in the middle of the right cheek, suppurating in the centre, and inclining to bleed towards the circumference. This sore was exceedingly obstinate, refusing to yield to the constitutional and local treatment resorted to."

In the summer of this year she went to England, the sore being unhealed, and the menstruation very irregular. The cutaneous manifestations seem to have subsided in the month of October, coincident with which she began to menstruate regularly each month, the discharge on each occasion being profuse, and lasting about six days.

In March, 1866, Dr. Mason was requested to see her again, owing to a fresh outbreak of the eruption; and from about this time onwards until I saw her in May the menstruation was very irregular—that is to say, she menstruated for one day every week for four weeks, the discharge being, however, very scanty, after which a fortnight elapsed, before the next menstrual flow, and then the weekly discharges reappeared again for other four weeks, and so on.

The only parts of the skin implicated from first to last were the face, arms, front of the chest, and legs. When I saw her I was struck by the arrangement of the round patches of eruption which were left in the sites of the hæmorrhagic attacks. One was on the centre of the brow, another on the chin, and one on each cheek. On the front of each arm, also, there were four in a row—two on each upper arm and two on each forearm. When the chest was the seat of the eruption, the patches also occurred in a row down the front of the sternum. It will thus be observed that the symmetry of the patches was wonderfully perfect, pointing very conclusively to the constitutional origin of the complaint. The patches were oval or rounded—some of them resembled erythema; while others were covered with crusts, due to the desiccation of serum, blood, or pus, and resembled eczema.

One of the most marked peculiarities of the hæmorrhage was the suddenness of its invasion. She sometimes exclaimed, "Oh, I feel another place on my face again!" and *immediately* the hæmorrhage set in. One day when Dr. Mason was dressing a patch of eruption on her face, she suddenly called out, "Oh, I feel a place on my arm!" He at once turned up her sleeve, and sure enough a large oval patch fully 2 inches in length and 1 in breadth was detected on her left forearm.

Each outbreak was accompanied by a burning pain, and for some time after the development of a patch, especially on the arms, the part was very sore, but never itchy. An oval or round red ring, varying from the size of a shilling to that of a crown, formed almost instantaneously, and the redness quickly spread inwards over the enclosed skin. As soon as seen, the patches appeared as if the cuticle had melted away, and the surface was quite wet. Sometimes the exudation was like water at first, and changed into blood; at other times, and especially on the face, the patches were at once covered with a complete dew of blood. The hæmorrhage did not, however, consist merely of a dew of blood—that was only at the outset—it was actual bleeding as from a cut, the blood sometimes streaming down the face or other part attacked.

Sometimes, instead of blood, there was only a serous discharge, ending in suppuration. Those patches which bled most healed soonest, but before they healed (which generally took place within five or six days) both suppuration and hæmorrhage often occurred at the same place. In exceptional instances the parts did not heal for four weeks. This was especially observed on the chin. No trace of the previous eruption was left after it healed up, except on the right cheek, where suppuration was free and prolonged, and where a trifling cicatrix was left, although not sufficient to cause deformity.

At first she had not the slightest warning that an outbreak was at hand, but, at the latter periods of her illness, Dr. Mason "observed her lean her head upon her hands, and wear an almost anxious look; and on questioning her she said she felt rather giddy, and in a quarter of an hour or less another place would break out."

There was rarely more than one attack each day, although sometimes the hæmorrhage occurred from two separate portions of skin simultaneously. It is very curious to note, too, that the outbreak *generally* occurred at the same hour each day—namely, at eleven a.m., but it did not seem to be under the influence of mental or bodily excitement, or to be induced by taking food or stimulants. Occasionally it occurred in the afternoon, and sometimes a day passed without an attack.

While still suffering from this complaint, she had a severe attack of whooping-cough, which seemed greatly to aggravate the patches on her face, causing them to bleed freely. At this time, also, she had frequent and copious epistaxis, generally after a fit of coughing or retching, and this somewhat relieved the parts attacked.

This young lady was rather an excitable person, but her general health was good, and the bloody discharge was not sufficiently profuse to weaken her.

She had been seen by a number of medical men, some of whom, at all events, regarded the ailment as being dependent upon debility, as was evidenced by the courses of cod-liver oil, steel, &c., which were administered; but Dr. Mason and I regarded it as one of vicarious menstruation.

The treatment which was accordingly adopted was the maintenance of free action of the bowels with aloes and iron pills, especially when there was any menstrual flow, at which time she sat for about an hour in a hot mustard hip-bath, and had a few leeches applied to the insides of the thighs.

Locally, when the hæmorrhages occurred, the parts were bathed with cold water, and afterwards dusted with powder of oxide of zinc. Dr. Mason also combined with this treatment the administration of Fowler's solution, which she had been getting before I saw her, and which, at all events, did no harm; although I was rather opposed to it on theoretical grounds, as being apt to produce congestion of the skin, and to favour the outbreaks.

Within a fortnight of the commencement of the treatment directed against the disorder of menstruation, there was manifest improvement, and Dr. Mason reported that by the beginning of June the cutaneous manifestations had quite disappeared, and no traces of them were left except the slight scar previously referred to, and slight redness of the previously affected parts if she got overheated or excited. About this time, however, she had on one occasion a slight discharge of blood from the eyes. Her menstruation, although considerably improved, was not well established.

On October 27, 1866, Dr. Mason reported that she remained "quite free from her old and troublesome complaint," and that her menstruation was "pretty regular," though "not quite up to the mark;" and on May 19, 1867, he reported, "The young lady is now quite well, and has been so since I wrote you last."

A girl,* aged fourteen, was admitted to the Western Infirmary on 20th January, 1888, and gave the following history of her illness:—

For eight and a-half months she had suffered from the development of patches on the skin which suddenly became painful, and shortly afterwards the seats, at first, of a serous, and afterwards of a sanguineous discharge. From first to last the parts affected were the prominences of both cheeks, the suprascapular regions, and the front of both thighs and legs, showing, in a very striking manner the symmetrical distribution of the disease. About eleven months before admission she had an attack of epistaxis which lasted for about a day, and was pretty severe. There had been a recurrence of hæmorrhage from the nose about three weeks after this, but not nearly so profuse as on the former occasion. Exactly one month from the date of the last epistaxis, the first spot appeared on the skin of the left cheek. Its development was as follows:—A small round area of the skin on the left cheek became suddenly the seat of an aching pain, which lasted from about a quarter to half an hour without any further change. At the expiration of this time, there began to exude from the patch a sticky transparent material like gum or white of egg. The commencement of this exudation seemed to be coincident with, or to determine the cessation of the pain. This discharge continued for half to one and a-half hours of a clear colour, but at the end of that time it became at first mixed with, and, apparently, ultimately replaced by, a sanguineous discharge or exudation. After the discharge became red it never continued longer than an hour—usually less. The hæmorrhage varied greatly in amount, there being sometimes only a few drops, and at others a small stream of pure blood flowed. From time to time, without any constant interval, fresh areas, which passed through the same changes, appeared, but two days seldom elapsed without some spot making its appearance. She noticed, however, that every third week there was a great exacerbation of her symptoms, which lasted for about seven days, during which time the hæmorrhagic areas were much more numerous. She has not yet begun to menstruate, but seems in every other respect to be a robust and healthy girl.

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* Reported by Wm. Maclennan, M.B., House Physician.

Her treatment, which was as follows, was begun on the 28th January, at which time the hæmorrhages from the skin were at their worst. Her bowels were carefully regulated with pil. aloes et ferri gr. v, and pil. potassii permanganatis gr. i thrice daily, was ordered to be given for two days prior to the time that menstruation seemed likely.

2nd February.—Three days ago she menstruated for the first time, and the discharge, though scanty, was otherwise normal. It continued for four days. To-day two spots have reappeared on the face and one over the left acromion process, but the hæmorrhage was very slight.

16th February.—One spot has again appeared on the face.

3rd March.—For the past two days the permanganate pills have again been given, and to-day menstruation has again appeared without the slightest recurrence of the hæmorrhage from the skin.

B. S.,* a girl of twelve years of age, was admitted to Ward IV. of the Western Infirmary, on 17th January, 1893, with an eruption of eighteen months' duration.

The family history is unimportant. Her general health has always been good, but for occasional headaches. No cause can be assigned for the outbreak which, when it first appeared, attacked the lip and brow, and afterwards involved the face, arms, body, and legs in succession. It affects only a limited area at one time, and leaves one part to reappear in another. Varying intervals elapse between successive crops, sometimes one or two days, sometimes as much as a fortnight; but the old patches have never been entirely healed before new ones come out. During the month before admission she had two or three bleedings from the right ear and from the nose, by which she lost a good deal of blood. These attacks lasted about a quarter of an hour. She has never menstruated. The urine and temperature are normal.

Shortly before the appearance of each crop of eruption, the patient feels rather sick. Then a red and circumscribed erythematous patch, of varying diameter, but usually round, comes out, oftenest upon the face or the arms, but not infrequently upon other parts of the body. After an interval of from a few minutes to half an hour the central portion of this patch becomes more intensely red, and forms an oblong or more rounded figure, from $\frac{1}{2}$ in. to 1 in. in length, and $\frac{1}{4}$ in. broad. Over this area the corium appears to undergo rapid solution, and a watery serum exudes, which occasionally is distinctly blood-stained. At or near the margin, either slightly before or simultaneously with the development of the central spot, a ring of deeper colour forms, but does not go on to exudation. This ring is about half a finger's breadth in width. Each patch of eruption remains out from half an hour to an hour and a-half, and then gradually fades. The serous or sanguineous exudation dries up, and forms a palish or a dark-brown scab, according as blood was absent or present. In a week or so this scab falls off, leaving behind a pink cicatricial tissue, which is for some time tender to pressure.

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* Reported by Wm. R. Jack, M.B.

Each crop of eruption is usually composed of several patches, which appear at irregular intervals. Sometimes two or more come out together, sometimes they follow each other at intervals of about half an hour, or a longer time may intervene. The whole crop has usually appeared within a few hours. The separate patches appear very rapidly. The eruption is never itchy, and only occasionally painful. Where the exudation is only serous, it bleeds very readily if touched.

On admission, patches of the cicatricial tissue referred to were found on the forehead and legs; and within a few days new patches appeared on the cheeks and on the dorsum of the right arm and hand, where their long diameter corresponded to the length of the limb.

The treatment consisted in hot hip baths with mustard, and the administration of pil. aloes et ferri. Towards the end of February Carlsbad salts were added. The patient, however, improved but slightly, fresh crops of eruption appearing every few days. Her general health remained excellent.

On March 1st she was put upon ergot of rye. The attacks of eruption then rapidly diminished in number, and she was taken away by her mother upon 11th April, 1893. At that time she had had but one attack in five weeks, a fortnight before she left.

Erasmus Wilson, in his valuable work *On Diseases of the Skin*,* reports two cases of vicarious menstruation very similar to my own, one being that of "a young lady in whom a discharge of this nature took place every fortnight from four circular spots, each about the size of a half-crown, and situated symmetrically on the face; one being on each cheek, one on the forehead, and one on the chin."

He also quotes a very extraordinary case of a young woman of eighteen, who "suffered a loss of blood from 'her ears, a little after at the points of her fingers, and then at her toes; presently after at the umbilicus and corner of the eye; several times by sweat; and at length it burst out from the middle of her breast; afterwards in the foot, where the saphena is pricked in bleeding; then at both palms and back of the hands. Two days after it flowed from her chin, and in the night-time from the tip of her tongue, and all this in a fortnight's time. Whenever it flowed from her ' breast or other parts like sweat, there was no vestige of an orifice to be seen.' "

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* Sixth edition, p. 821. London: Churchill.

M. Brierre de Boismont, in his work on menstruation,* quotes the following case from the *Médecine Pratique* of Pinel :—" Miss A. had been subject to attacks of hysteria from the age of eleven, which were followed by vomiting of blood. She menstruated at fourteen; her health was re-established, and the catamenia continued to flow regularly for several months. A sudden fright suppressed the menses, and again hysteria came on. Vicarious menstruation now occurred. The legs swelled and were covered with vesicles, and during six months blood was regularly discharged from them. The left arm swelled, and the legs recovered, and for a year there was a regular sanguineous discharge from the arm. A third deviation occurred from the left hand, which had been slightly wounded. The ' menses ' flowed from this opening for six months. In the fourth year two wounds were formed on the face from an attack of erysipelas ; one upon the side of the nose, the other on the upper eyelid. For two years the periodic discharge took place from these openings, and it no longer occurred from the thumb. The abdomen, in its turn, was attacked with erysipelas, and for five months regularly there was a discharge from the navel at each menstrual period. For four months the discharge proceeded from the inner ankle of the left foot ; for two months from the left ear ; for three from the left nipple. When the discharge did not flow from any one part, bleedings at the nose and vomitings of blood, preceded by convulsions, pains in the head, and giddiness, took place. After remaining some time at the Salpétrière, the health of this young female improved, and regular menstruation was established."

In the *Lancet* for March 2, 1861, a very curious case which came under his care is related by Dr. T. K. Chambers, of which the following are the most salient points :—

The patient was a young woman, the subject of suppressed menstruation, who " constantly suffered from want of appetite, cough, pains in the chest, and a feeling of debility," although her appearance was that of robust health, and who, at the age of twenty-three, became the subject of a cutaneous eruption on the face, the development of which is thus described :—" She feels first a peculiar soreness and tenderness of an isolated spot which enables her to predict that in the course of a few hours an eruption is going to commence. The first appearance of this is an erythematous blush, sometimes slightly raised above the surrounding surface, but not so much as in erysipelas. After an uncertain time, seldom more than a few hours, there may be detected a scattered crop of fine vesicles, like sudamina, mixed with a fine serous dew, uncovered by any pellicle. This never lasts long enough to form colourless drops, for quickly it becomes blood-stained, and then little points of blood are seen oozing out, sometimes so slowly as to dry and form a scab, sometimes collecting into great thick gouts, and trickling in a ghastly way down her face." If left alone to dry into a scab, the bleeding "stops in a week or ten days, usually, however, to be succeeded, before it is quite recovered, by a similar eruption in another place. Sometimes, at irregular periods, there was an interval of a week or a fortnight; sometimes the cutaneous phenomena were replaced by bleeding from the nose, but never by hæmorrhage from either lungs or bowels. These symptoms continued nine months, and were relieved by anticipating the eruption of blood with leeches applied to the spot where it was expected. The discharge became serous, then was like little blisters, and finally ceased, when her health was re-established by the sea air of Margate."

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* *De la Menstruation considerée dans les Rapports Physiologiques et Pathologiques.* Paris, 1842.

In September, 1860—that is, four years from the commencement of the first attack—she was admitted into St. Mary's Hospital with similar symptoms; but on this occasion the face was not attacked. "When she lies down much in the day," writes Dr. Chambers, "that, indeed, is almost always the locality where it has appeared; but when she is about, the legs and thighs have exhibited like appearances; both forearms too, and once the chest, were attacked." The fluid exuded "contained blood discs, . . . much granular matter, dark, fatty-looking specks, and scales of epidermis." Blood drawn from a prick in the finger looked perfectly natural. On two occasions she threw up from the stomach about half a pint of dark brownish-purple sanguineous fluid; and occasionally her pocket-handkerchief was stained with blood, reported to have come from the nose.

"She was bled three times," writes Dr. Chambers, "and after each bleeding successively there was a decided improvement in the quantity and quality of the eruption. Four times there were leeches applied to the groins, but I could not trace any benefit to that. But when leeches were applied to the spot affected, they certainly arrested the hæmorrhage at that spot, and diminished its future violence elsewhere. She had leeches applied in this way, to one place after another, thirteen times during the month of December, making seventy leeches in all, in addition to twenty-four ounces of blood taken by venesection. Yet, though blood-letting has been thus freely employed in the way most calculated to cause debility, namely, in small and repeated quantities, she has gained power and vigour, got less hysterical, and improved in every way, at the same time that her cutaneous hæmorrhage has been gradually diminishing. For a few days while convalescing she had a spontaneous diarrhœa."

Contemporaneously with blood-letting, aloes and oleum sabinæ, in various doses, were employed, and consequent upon that treatment, about five weeks before she left the hospital, the catamenia occurred once and flowed for five days. No immediate lessening of the cutaneous hæmorrhage followed the establishment of the uterine function; it had begun to improve before, and continued to improve after it, so that by the beginning of February, 1861, it had ceased altogether.*

Chambers cites two cases from the *Archives Générales de Médecine*, 1829 (t. xix., pp. 112 and 113)—one of a young lady, who, after ten years' suppression, menstruated for three years through a vesicular eruption in one finger; and the other of a prostitute, in whom the discharge occurred through spots of the size of a five-franc piece, which appeared from time to time, one after another, on the breast, in the axilla, on the back, the buttocks, and the epigastrium. "The description of this case," writes Dr. Chambers, "accords closely with that of our patient, especially in the eruption being less periodical and more continuous than happens in most vicarious menstruations. The uterus also was healthy, for she became pregnant and bore a child."

Chambers also quotes from Hensinger† the case of a woman who had diseased ovaries and recto-vesico-vaginal fistulæ, in whom, although the catamenia sometimes appeared at the proper place, they were generally arrested there, and appeared in a variety of parts of the skin, but especially on the face. She had suffered five years, was very hysterical, and had been in several hospitals.

Besides the above, cases have been related by A. Finol,‡ Schilling,§ Leuhossek,‖ Voigtel,¶ Van Swieten,** and others, but space will not permit of my alluding to them further.

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* In a letter dated July 29, 1867, Dr. Chambers wrote me as follows:—"Shortly before my illness in the spring of '64, I saw the young woman. . . . She had experienced occasional attacks of hæmorrhage from the skin during the interval since I last saw her, but could always keep them off if she could get some leeches at the right time. She came then to ask for some leeches, for which I gave her a sort of general order. She distinctly said that she always found herself stronger after artificial loss of blood. I observed in her one thing which I did not, I think, notice in the lecture—namely, a peculiar livid injection of the conjunctivæ before the skin became affected."

† Schmidt's *Jahrbuch*, 1836.

‡ *Observation d'une Dégénération telle que le Sang transsudoit par la Peau;* Sédillot, *Recueil periodique de la Soc. de Méd. de Paris*, xix., p. 71.

§ *De Sudore Sanguineo, post Graves Convulsivos et Spasmodicos Affectus erumpente, Feliciter tandem Sublato; Acta Acad. Nat. Cur.*, vol. iii., p. 425.

‖ *Physiologia Medicinalis*, vol iii., p. 352.

¶ *Stark's General Pathology*, p. 1131.

** *Commentaries on Boerhaave*, sec. 1286.

It must not be supposed that all cases of hæmidrosis are connected with derangements of menstruation. That such a conclusion is erroneous is proved by the fact that it has been observed in adult males and in infants. Thus Hebra * tells us "of a young man, strong and well-nourished, who was attacked repeatedly by hæmorrhage from the surface of the lower limbs. This generally occurred during the night, so that he first became aware that the bleeding had taken place by finding the sheets stained with spots of blood when he awoke." "I once, however," continued Hebra, "saw blood flow from the uninjured back of the hand of this patient while he was sitting near me at table. The blood formed a jet, which would about correspond in size to the duct of a sweat-gland. This jet had also a somewhat spiral form, and rose about 1 inch above the surface of the skin."

Beneventus, too, has recorded the case of a man who discharged blood once a month from his right side.† And M. Du Gard ‡ has described a case, quoted by Erasmus Wilson,§ of a child three months old that was "taken with a bleeding at the nose and ears, and in the hinder part of the head, which lasted for three days, and afterwards the nose and ears ceased bleeding, but still blood-like sweat came from the head. Three days before the death of the child, which happened the sixth day after it began to bleed, the blood came very violently from its head, and streamed out to some distance. It also bled on the shoulders and at the waist;" "it bled also for three days at the toes, at the bend of its arms, at the point of the fingers, and at the fingers' ends."

From a study of the recorded cases of ephidrosis cruenta—a title, by the way, which was given to the disease by Dr. Mason Good, but which is singularly inappropriate, for the discharge is a hæmorrhage, and not a perspiration tinged with blood, as some have supposed—the following conclusions may be drawn:—

1. Discharges of blood from the skin, apart from wounds, abrasions, ulcers, and the like, are exceedingly rare.

2. In some cases such discharges are preceded by the development of oval or round patches of erythematous inflammation; in others, by the eruption of crops of vesicles, such as I once saw in an instance of milky (white fibro-serous) discharge from the leg; while in a third

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* "On Diseases of the Skin," by Ferdinand Hebra, M.D. Translated and edited by C. Hilton Fagge, M.D. Vol. i., p. 94. *The New Syd. Soc. translation.* London, 1866.

† *Van Swieten's Commentary on Boerhaave,* vol. xiii., sec. 1286.

‡ "Medical Essays," abridged from the *Philosophical Transactions,* vol. i., p. 52.

§ *On Diseases of the Skin,* by Erasmus Wilson, F.R.S. Sixth edition, p. 820. London: Churchill.

class of cases the hæmorrhage comes from the follicles without any intervening eruption.

3. The disease occurs most frequently in females, and in connection with amenorrhœa or defective menstruation, being, in fact, a species of vicarious menstruation.

4. That such is its invariable pathology, however, is disproved by the fact that it has been known to occur in infants and in adult males.

5. That the treatment by means of nourishing diet, stimulants, and tonics, on the supposition that the hæmorrhage is due to debility and deterioration of the blood, is unsuitable in the majority of cases.

6. That, on the other hand, an opposite line of treatment—and especially the abstraction of blood, local or general, or both—is much more likely to prove serviceable, and to stop the discharge.

7. That, when the disease occurs in the female in connection with anomalies of menstruation, these must be corrected by the usual means.

Referring to the bloody sweat of Christ, the celebrated Dr. Mead made the following observations:*—"St. Luke relates of Christ Himself that, when He was in an agony by the fervency of His prayers, His sweat was like drops of blood falling down on the ground. This passage is generally understood as if the Saviour of mankind had sweated real blood, but the text does not say so much. The sweat was only *ὡσεὶ θρόμβοι ἁίματος*, as it were, or like drops of blood—that is, the drops of sweat were so large, thick, and viscid, that they trickled to the ground like drops of blood. Thus were the words understood by Justyn Martyr, Theophylactus, and Euthrymius."

IV. DISEASES PRODUCED BY UNIFORM CAUSES.

A. PARASITIC AFFECTIONS.

I.—CUTANEOUS AFFECTIONS DUE TO THE PRESENCE OF VEGETABLE PARASITES (DERMATOPHYTA).

These have certain characters in common, to which it may be well in the first instance to allude.

1. They are all dependent upon the presence of fungous growths, which excite inflammatory reaction at the parts involved.

2. They are all more or less contagious, though some persons are more susceptible to their influence than others, and it may be laid down as a rule that those who are debilitated, broken down, or scrofulous (or syphilitic, say some) are more liable, *cæteris paribus*, to suffer, when infected, than perfectly healthy persons.

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* Medical Works of Richard Mead, M.D. London, 1762. p. 630.

3. But, while this is so, it has never been my lot to see a case of one parasitic disease giving rise to another, as some assert, though it is quite possible for a patient who affords a suitable soil to suffer at one and the same time from two separate parasitic affections. The fungi, in my experience, always breed true.

4. The eruption which results has in almost all cases a great tendency to appear in the form of round spots or patches, or in circles or segments of circles.

5. Skin diseases of constitutional origin are generally symmetrical (*i.e.*, if there is eruption on one side of the body, there is usually more or less on the corresponding part of the other side); the disease, at all events is not one-sided. A parasitic skin disease, on the other hand —although certain constitutional states are favourable to its development—is dependent upon a local cause (the fungus), and is, therefore, generally non-symmetrical. This feature may, therefore, sometimes help us in the diagnosis of a doubtful case, as, for example, between eczema nummulare and ringworm.

6. Parasitic diseases are curable by the use of remedies which destroy the fungus (such as a lotion of perchloride of mercury, 2 grains to the ounce), provided we are able to reach it, which, however, it is almost impossible to do if it has penetrated the hair follicles and infiltrated the hairs.

7. When the eruption disappears, although pigmentary stains may for a time be left, there are, as a rule, no permanent traces of it in the shape of cicatrices, unless as the result of improper treatment, or unless the disease is on hairy parts, and has destroyed the hair follicles.

8. One attack offers no security against another, although, after the cure is complete, there is no tendency to a relapse, as in the case of many constitutional skin diseases, unless as the result of re-infection.

There are four diseases of the skin dependent upon the presence of four separate fungous growths, viz.:—1. Tinea* favosa; 2. Tinea tricophytina; 3. Tinea versicolor; 4. Tinea imbricata.

1. TINEA FAVOSA.

Syn.—*Dermatomycosis achorina—Favus—Honeycomb-Ringworm.*

Parasite, Achorion Schönleinii (so called in compliment to Schönlein, its discoverer).

There are three varieties of tinea favosa, viz.:—(*a*) Favus of hairy parts; (*b*) Favus of non-hairy parts; (*c*) Favus of nails.

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* Tinea, signifying a moth or woodworm, is the generic term for skin diseases produced by fungi.

The following are the microscopical characters of the achorion Schönleinii:*—The field is dotted over with innumerable little bodies—spores or sporules—about $\frac{1}{3000}$ of an inch in diameter: they are oval or rounded, or have a constriction in the middle (see Fig. 37), and frequently granules or nuclei are seen in their interior. Tubes, too, from $\frac{1}{4000}$ to $\frac{1}{15000}$ of an inch in diameter, often in great abundance, are observable, many of which are branched (see Fig. 38); they may be empty or have granular contents; many of them are simple, but some are jointed, as if originally formed by numbers of spores attached to one another like the pieces of a necklace. In addition to the spores and tubes an immense quantity of granular matter—stroma—is seen, and in special abundance if a portion of a favus cup (afterwards to be described) near its circumference is examined: this constitutes the early stage of the spores. When the disease, as is usual, is situated upon hairy parts, the hairs are found to be more or less impregnated with the parasite, especially towards their roots, though not nearly to the same extent as in cases of ordinary ringworm (see Fig. 39).

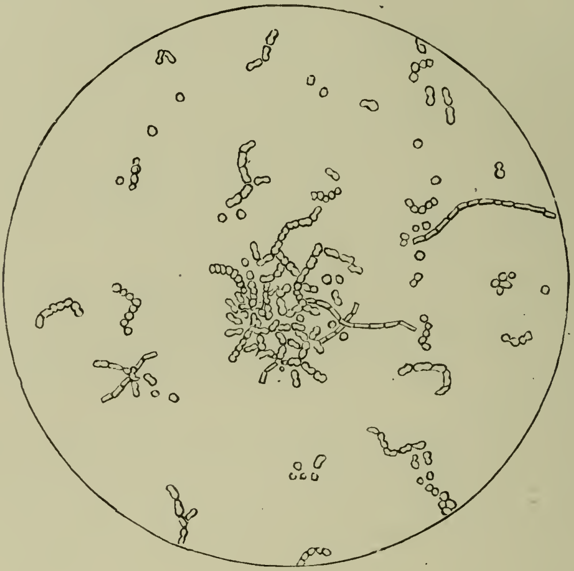

Fig. 37.

Chains of Spores and Isolated Spores.

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* In examining hairs or morbid products for fungous growths, place two or three hairs or a little of the *débris* upon a glass slide; add a drop of liquor potassæ, protect the specimen with a thin glass cover, and, after waiting for a few minutes, examine with a microscope magnifying, say, about 300 diameters.

According to Unna and Frank, there are three varieties of favus produced by three distinct species of fungi (I. Achorion euthythrix with straight running hairs; II. A. dikroon from the fork-like form of the hyphæ; and III. A. atakton from the irregular course of the hyphæ). They give the following table of the differential diagnosis of the scutula in these three varieties as seen on the cheek of the mouse :—

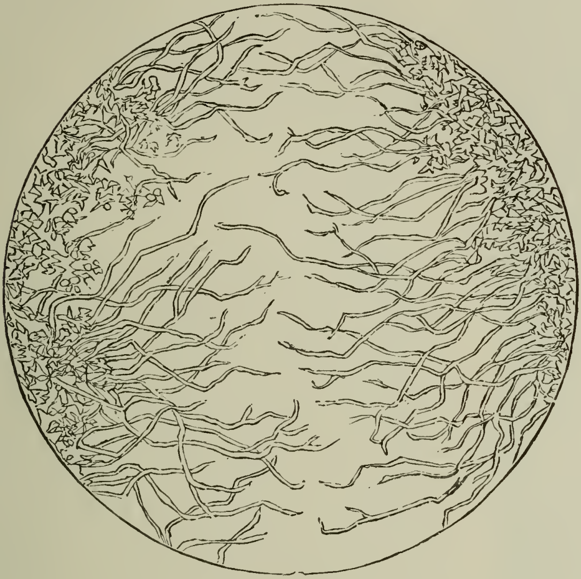

Fig. 38.

Branching Tubes.

I. Favus griseus.	II. Favus sulphureus tardus.	III. Favus sulphureus celerior.
Scutulum, medium size (that of lentil), and thick; *surface*, slightly raised or flat, not cup-shaped; *colour*, greyish-yellow, like old wash-leather, no sheen or polish. It is permeated everywhere by fine and coarse hair.	*Scutulum*, very large, covers the whole cheek, thick; *surface*, cup-shaped, showing small elevation, and crenulated; *colour*, yellowish-white, like cream; a leathery gloss, shining in spots. The hair is repressed, so that it does not perforate it.	*Scutulum*, small size (that of a peppercorn); *surface*, cup-shaped, smooth, but no sheen; *colour*, ochre-yellow at the periphery, whiter towards the centre, horny-brown along the crenated margin. The fine hair is repressed, but it is perforated by the coarse hair.*

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* Those who are specially interested in this subject—which possesses more scientific than practical value—will find the original paper in the *Brit. Journ. of Derm.*, May, 1892, p. 139.

This disease, which is decidedly contagious, usually makes it appearance in children, especially in those who are scrofulous, debilitated, or uncleanly; hence it is generally, though not exclusively, met with amongst the lowest classes of the community. It occurred 352 times among 38,054 consecutive cases of skin diseases at the Hospital for Skin Diseases, Glasgow, but only 4 times among 2,000 consecutive private cases, and in all four the body, and not the head, was attacked. The affection seems to be much rarer in England.

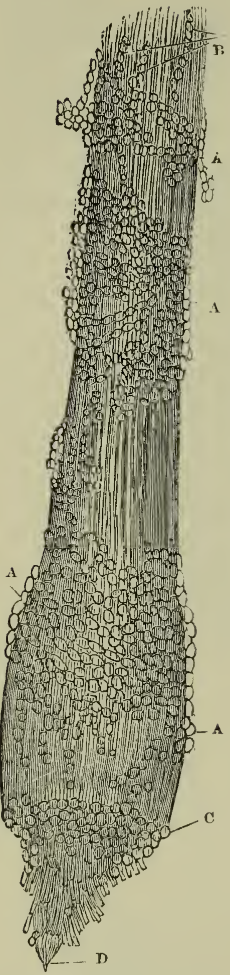


Fig. 39.
Hair with favus fungus. A, A, chains of spores projecting beyond the edges of the hair; B, spores between the fibres of the hair; C, D, broken up root end of the hair, with masses of spores between the laminæ (Küchenmeister).

(*a*) *Favus of hairy parts* (Tinea favosa capitis—Favus pilaris).—This variety, although it may be met with upon any part of the surface which is provided with hair, is usually only seen upon the scalp, and the symptoms are best studied a couple of weeks after all crusts have been removed temporarily by treatment (poultices, &c.) Little yellow specks are then generally observed here and there, at the orifices of the follicles, which, on examination with a hand-glass, are seen to be minute, round, bright yellow crusts, depressed in the centre, surrounded by an inflammatory areola, and through the centre of each one or two hairs pass. These crusts, at first almost semi-fluid, gradually become more consistent, and increase to the diameter of three or four lines, but still retain the same shape and colour. With care, the cup, which is enveloped in an amorphous capsule, can be readily raised from the subjacent structures, and the under surface is then seen to be convex (see Fig. 40), fitting into a depression in the skin, which is covered with a thin layer of epidermis, and which soon fills up, but, unless the hair is completely removed along with its bulb, and a parasiticide applied, a new cup shortly replaces that which has been removed. These crusts may be *isolated* (Favus lupinosus), or *confluent:* in the latter case they are apt to encroach upon one another, the circular depression may be lost, and they may become partially detached, thus giving rise to irregular masses of yellow crusts; but even then the edges of the patches are seen to be composed of a series of little segments of circles, the remains of the original cups (Favus scutulatus).

Generally more or less *itching* is present, although it is rarely excessive, and the odour emanating from the patches is very peculiar, and appropriately described as being "mousey" in character. The *appearance of the hairs* springing from the affected parts is seen to be altered. Owing to the ravages of the fungus and the arrest of the sebaceous secretion they lose their shining appearance, become thickened, dry, ash-grey or reddish, brittle (though not so much so as in ringworm), and break readily, or split longitudinally, or appear twisted, and are more readily extracted than in health. If the disease is neglected, the follicles, owing to the pressure, become obliterated, permanent alopecia results, and the scalp has an atrophied, depressed, dry and parchment-like appearance. The irritation of the fungus not unfrequently leads to the development of a pustular eruption, which, however, forms no necessary part of the disease, to enlargement of the neighbouring glands, and even to abscesses. The eruption may be very limited in extent, but in many cases it has a tendency gradually to involve the greater part of the scalp, unless, perhaps, at its edges; and it sometimes happens that the patient, by first scratching it and then other parts, may transfer the disease by infection to the non-hairy parts of the body.

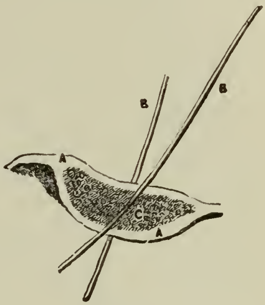


Fig. 40.

Favus cup.—A, A, amorphous envelope; C, favus matter; B, B, hairs traversing the favus cup (Robin).

Diagnosis.—The disease which is most likely to be mistaken for favus of the head is eczema impetiginodes, but the following table should help to clear up the diagnosis:—

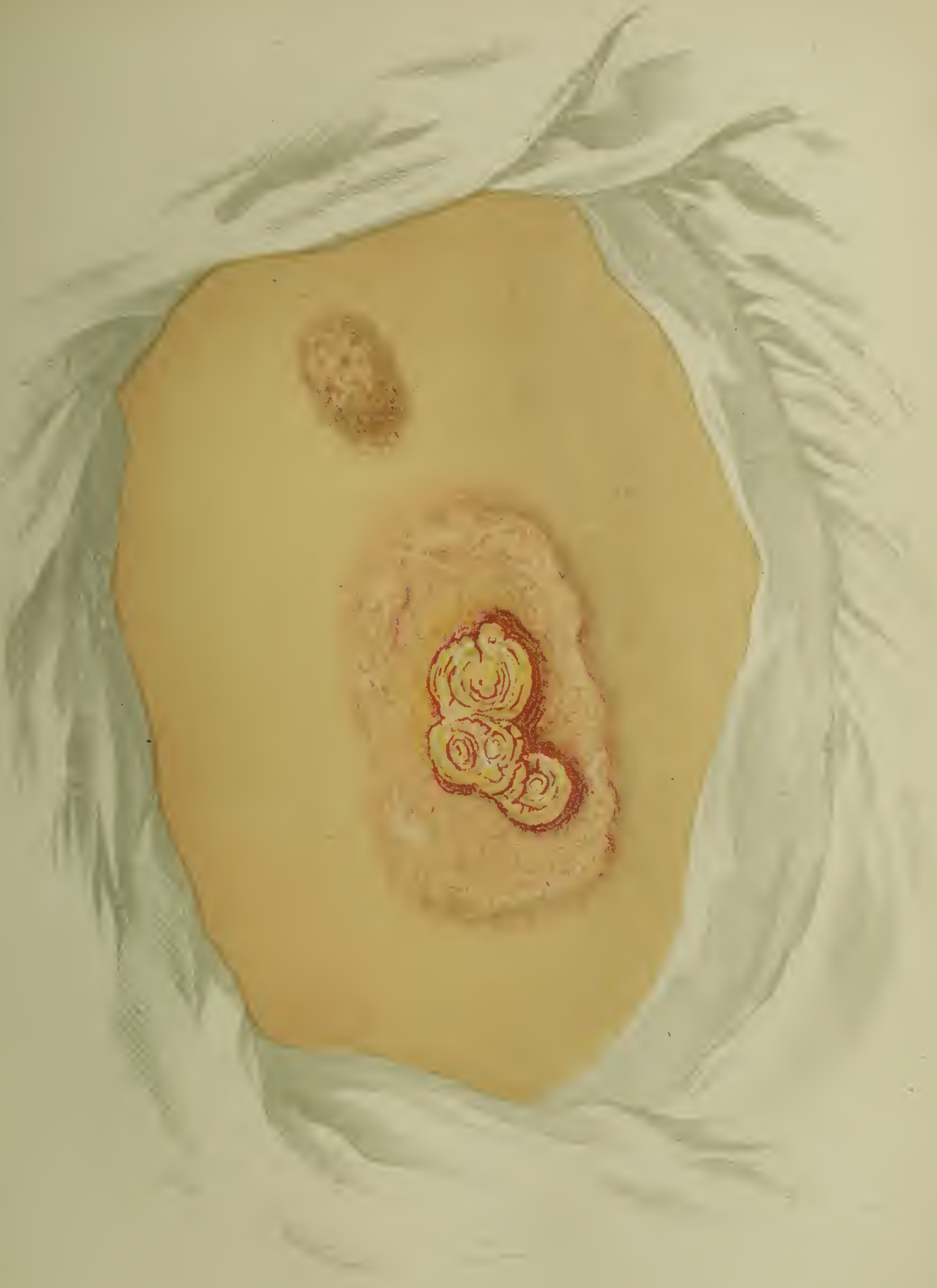
Tinea favosa capitis.	**Eczema impetiginodes capitis.**
1. Contagious.	1. Not contagious.
2. Though pustules and crusts may appear from irritation of the scalp, favus cups also usually discovered.	2. Pustules or crusts, due to the drying-up of their contents, always present; but never any cups.
3. Odour characteristic and "mousey."	3. No characteristic odour.
4. Hairs dull, dry, discoloured, and easily extracted.	4. Hairs healthy.

5. Many of hairs, sooner or later, apt to be destroyed, leaving permanently bald, atrophied patches.	5. Some of the hairs may fall out temporarily, but no permanent alopecia unless from gross neglect or mismanagement.
6. Fungus readily detected in the crusts and hair with the microscope.	6. No fungus to be discovered.

The diagnosis is rendered more difficult if, as often happens, the head is cleared of crusts before the patient is brought for advice; then the redness of the scalp, studded perhaps with pustules, the result of the irritation of the fungus, or of poulticing, gives a superficial appearance of eczema impetiginodes. But in favus the deep red, sharply demarcated surfaces, covered by thin shining epidermis, is very different from the bright-coloured, diffused redness of eczema. In the former, too, the alterations in the appearance of the hairs are characteristic, while the fungus is detected in some of them with the microscope, and often here and there some permanent alopecia may be discovered. If we are still in doubt it is desirable to ask the patient to leave the head untouched for a fortnight, by which time the disease will have had time to reappear to an extent sufficient to render its diagnosis a matter of little difficulty.

(*b*) *Favus of non-hairy parts* (Tinea favosa epidermidis).—This variety makes its appearance in the shape of roundish spots, which are bright red in tint, and at first very minute, but they soon increase in size, and may reach that of a crown-piece; they are, in the advancing stages, considerably elevated, and soon become somewhat itchy and scaly. As they increase in size, they tend to heal in the centre, and to spread with an elevated edge, so that at last red, elevated, scaly circles of eruption are left, enclosing skin which is comparatively healthy. On careful examination, the nature of the disease can sometimes be suspected, owing to the discovery amongst the scaly *débris* of yellowish streaks (the fungus); and if the parasite penetrates into a hair follicle, yellow cups make their appearance, just as on hairy parts which to the careful observer at once betray the nature of the affection (see coloured plate). In the absence, however, of favus cups and of yellow streaks, the appearances are almost identical with those of ringworm of the body (see Tinea circinata), and mistakes are often made, even by the most experienced. This is one of the principal reasons for the opinion that tinea favosa and ringworm may be produced by one and the same parasite. The diagnosis between tinea favosa epidermidis and tinea circinata will be described under the latter affection

(*c*) *Favus of the Nails* (Tinea favosa unguium).—This condition,



Thoˢ Kell & Son Lith.

TINEA FAVOSA EPIDERMIDIS.

(FAVUS OF THE EPIDERMIS.)

from a drawing by **Eᴰ BURGESS.**

which is only exceptionally met with, is due to the deposition underneath the nail of some of the fungus, owing to the scratching of an affected part. Here it readily takes root, and germinates, being placed most favourably for the purpose between the superficial and deep epidermic layers, the nail forming the superficial one (see Fig. 41). At the affected part, which is always, at first at least, near the free edge, the nail becomes thickened and opaque, and gradually assumes a yellowish tint, owing to the presence of the fungus underneath. As the parasitic elements increase they press upon the nail and lead to further changes; the normal longitudinal striæ become very apparent, fissures are formed, and by degrees the nail becomes more and more thin, until at last the fungous matter appears upon the surface.

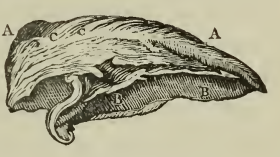


Fig. 41.

A, A, upper surface of nail; B, B, lower surface of nail; C, C, favus matter (white in the woodcut, yellow in the original), running upwards and forwards between the laminæ of the nail.

The occurrence of disease of the nails in persons suffering from favus of other parts should at once arouse our suspicions; and even in those very rare cases in which the nail disease is primary, the above characters, coupled with a microscopic examination of the morbid products, should lead to a correct diagnosis.

At a meeting of the Vienna Imperial and Royal Society of Physicians (on Nov. 28, 1884), Professor Kundrat showed a case of universal favus which had given rise to an abscess of the thigh, and which terminated fatally from severe gastro-intestinal disturbance, with uncontrollable diarrhœa. Numerous erosions, mixed with diphtheritic swellings closely resembling favus cups, were found in the mucous membrane of the stomach, and the achorion Schönleinii was discovered in them with the microscope.

Treatment.—It can easily be imagined that a disease such as favus, which can be traced back to the remotest ages, and which, till of late, was deemed incurable, should have called forth very varied and opposite principles of treatment. Some considered it to be essentially a constitutional, in fact a scrofulous, affection, to be removed by constitutional treatment only; others were of opinion that it was purely a local disease, to be removed by topical applications alone; while a third party looked upon it as a disease partly local and partly constitutional, and attacked it both by local and general remedies. The local treatment has, however, at all times and in all countries, played a more important *rôle* than the constitutional. When no treatment is adopted it is very rare for the disease to disappear, unless after it has destroyed every one of the hair follicles and produced permanent alopecia. But even then it may continue to flourish on other parts of the body. When left to itself it often lasts, more or less extensively, during the whole life of the person affected.

The effect upon the eruption of an acute intercurrent disease, typhoid fever, for example, is very curious. During its continuance the achorion does not flourish, but fades as plants do when the soil in which they are planted is not supplied with moisture, or is otherwise inappropriate; but it again assumes its pristine vigour after the disappearance of the fever.

Without entering at present upon the discussion of the principles of treatment generally put into force in this country, I shall first of all describe what I consider the best means to be employed in the majority of cases, and which, having been adopted by the French School, and especially advocated by Bazin and Hardy, have been carried out with excellent results. The basis of this treatment follows as a corollary to what has already been stated with regard to the nature of the disease; that is to say, considering, as I do, that its essence consists in the presence of a parasite, I hold that its destruction is the *sine quâ non* of the treatment. But, as has been already stated, some states of the system seem to prepare a soil more favourable to the vegetation of the fungus than others; so that it became necessary, not only to take means to destroy the parasite, but also to modify any weakness of constitution which may form a predisposition to the disease. We have, therefore, to put into practice an external treatment for the destruction of the exciting, and an internal for the removal of the predisposing causes.

Every one knows that there are various medicines capable of destroying vegetable parasitic life, and it might be supposed that their application alone would suffice to cure the disease; but in order that these remedies be efficient, it is necessary that they be brought into immediate contact with the parasite. This, however, cannot generally be done; for, as previously shown, the parasite penetrates into the interior of the hairs, and is found imbedded between their longitudinal fibres. It is therefore necessary, with all deference to Wilson, who speaks of depilation as "the purgatory of avulsion,"* to remove the hairs in addition to applying parasiticide remedies. It is altogether useless to shave off the hair, as many do; for we thus leave, imbedded in their follicles, those parts of them which are loaded with spores. Were shaving sufficient it would be very convenient being so easy of performance; but there can be no doubt that *nothing short of complete extraction* is effectual.

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* *On Diseases of the Skin*, by Erasmus Wilson, F.R.S. Ed. vi., p. 759. Churchill, 1867.

It may seem to those who have not tried it, to be somewhat superflous to give directions as to the mode of extracting the hair. The difficulty of the process, however, cannot be overrated, and many who have tried it have failed in curing the disease, and are, therefore, opponents of this method of treatment; but in these cases the fault lay, not in the principles of the treatment, but in the inefficient manner in which they were carried into practice. Many may, no doubt, call to remembrance the statement that in this disease the hair is more easily extracted than healthy hair; but I meant by this that, owing to the ravages of the parasite in the hair follicles, the bulbs of the hair become less firmly attached than healthy ones. And I must also call to remembrance another fact, namely, that the hairs become very brittle as the morbid process advances, and therefore, on attempting to extract them, those most diseased often break, leaving their unhealthy bulbs imbedded in the follicles. In fact, the physician finds the same difficulty in the extraction of the hair as does the dentist in the extraction of a tooth, which, though loosely imbedded in its socket, is so much decayed as to break readily on the application of the forceps. It may seem a somewhat cruel thing to propose the removal of all the hairs from a surface which is often very extensive; but it is only in exceptional cases, where the sensibility is greatly exalted, that much pain is experienced, and in the majority of instances patients soon become accustomed to it, and, seeing the benefit resulting from it, are only too anxious to have it continued. There are, moreover, certain applications, referred to further on, which have a decided tendency to diminish the uneasiness of depilation. But, even if the pain was considerable, this is no argument against it, provided it is successful. No physician abstains from a useful drug merely because it is nauseous, and no surgeon withholds the knife on account of its causing pain. Many physicians, also, who object to depilation, have no hesitation in applying the most powerful caustics; but I am very much mistaken if most people would not prefer the former to the latter, were it only on account of the less degree of pain produced, apart altogether from the results of these different modes of treatment.

There are three modes of extracting the hairs—

1st. Extraction by means of the fingers.
2nd. Extraction by means of the forceps.
3rd. Extraction by means of epilating sticks or the calotte.

1st. The extraction with the fingers is recommended by Kaposi. He grasps the hair between the thumb and a spatula, and pulls it sufficiently forcibly to extract the fungus-loaded hairs, leaving the healthy ones for the most part. A similar method was adopted by the Frères Mahon, combined with combing and brushing the affected parts: but this process has not met with that success which might have been expected from it, and even the Frères Mahon do not now hesitate to make use of the forceps when the above method fails.

2nd. All kinds of forceps are not suitable for this little operation (see Fig. 42). They should be about 3 inches long, and should not have a strong spring, otherwise the hand soon becomes fatigued in using them. They should be made so that the two extremites come together very exactly, and do not slide the one upon the other. Each extremity should be a couple of lines broad, so that a fasciculus of hair may be caught up at one time when required, and should be furnished on the inside with denticulations after the manner of a file. It is of great moment that the denticulations be very fine and also blunt, else the brittle hair may be cut across by them; and they must of course be arranged transversely, for the hairs would slip through them if they had a longitudinal direction. Forceps such as these are made by Mathieu (L. Mathieu, 28 Rue de l'Ancienne Comédie, Paris) expressly for depilation, and are used by Bazin and others at the St. Louis Hospital. (They may also be had from Mr. Hilliard, instrument-maker, 65 Renfield Street, Glasgow.) Some directions are also required with regard to their use. Care should be taken not to catch more than half-a-dozen hairs, at the most, at one time, and even these must be in close proximity to one another. It is necessary also to avoid extracting them except in the direction of their axis, else they are very apt to break, their roots remaining imbedded in the hair follicles, and the benefit which would otherwise accrue from the depilation is not obtained. It is advisable, too, to clean the points of the forceps often, for the *débris* which accumulates between the denticulations is apt to cause the forceps to slip when the hair is grasped. At the same time as the depilation is carried on, one of the so-called parasiticides should be applied; that is to say, after clearing about a square inch of surface of all its hair, one of the ointments or lotions about to be mentioned should be rubbed in. This is very useful, for the parasiticide thus penetrates into the hair follicles, whose orifices are more patent immediately after the extraction of the hairs, and is brought into direct contract with, and acts upon the spores which remain.

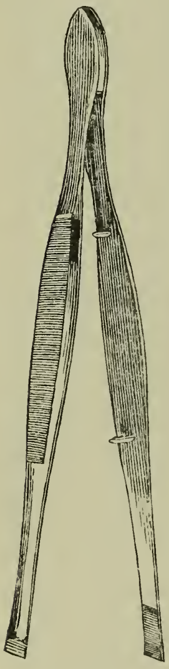

Fig 42.

Forceps for depilation.

If the diseased surface is not very extensive, all the hairs can be removed at one sitting, as in the following cases cited by Deffis in a pamphlet bearing this eminently French title—"Refutation of the Errors which M. Devergie's book contains:"—

"*March* 16, 1854.—León Dufour, aged six months. Two cup-shaped favus crusts on the back part of the head—cured in a single sitting, on the 16th March, 1854.

"*December* 9, 1854.—Julie Laporte, aged ten years. One favus cup on the summit of the head—cured in a single sitting, on the 9th December, 1854.

"*March* 30, 1855.—Alfred Hubert, aged six years. Four small favus cups on the scalp—cured in a single sitting, on the 31st March, 1855."*

As a general rule, as much as 3 or 4 square inches of surface can be cleared daily; so that, were it necessary to remove the whole of the hair from the scalp, this might be done in a week or two. But the extent of surface capable of being cleared at one sitting will depend entirely on the patient; those who have very sensitive skins being very intolerant of depilation, in which case we must be content with slower progress, the depilation extending over a period of two or three weeks, according to the degree of intolerance, and the amount of hair to be removed. In France, where this treatment first assumed a definite form, great stress is laid upon the manner in which the depilation is performed; and, indeed, in the St. Louis Hospital servants are employed (Épileurs, as they are called), whose whole duty consists in extracting the hair of those patients affected with vegetable parasitic diseases.

Their *modus operandi* is thus described by Bazin:—"Our depilators are seated, and cause the head of the patient to rest upon their knees. With one hand (generally the right) they hold the forceps as one holds a writing-pen; the other hand is applied to the part about to be depilated, with the thumb and index-finger of which they put the skin on the stretch so as to keep it steady. They then extract the hairs, pulling them out in the direction of their axis, and only a small number at a time, two, four, six, or at most a small bundle. It is necessary to avoid depilating too quickly or too gently, there being an intermediate point which one can only arrive at after a little practice." †

Before commencing the extraction of the hairs it is of course necessary to cut them short, say within two or three lines of the skin. Bazin also recommends the application of a layer of oil of cade, which he says "destroys in part the parasite situated on the surface of the skin, extinguishes the sensibility of the scalp, and facilitates the extraction of the hairs." For my own part, I very much prefer the use of almond or cod-liver oil, and regard it in the light of a valuable adjuvant to depilation. For it not only very decidedly allays the uneasiness, but also the hair grows more healthily, is not so friable, and therefore not nearly so likely to break on attempting to extract it. The head should be thickly smeared with it twice a day for a few days before the epilation is commenced, and this should be continued regularly as long as the epilation is required.

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* *Refutation des Erreurs que contient le livre de M. Devergie.* Par M. Deffis. p. 27. Paris, 1857.

† *Leçons Théoriques et Cliniques sur les Affections Cutanées Parasitaires.* Par le Dr. Bazin. p. 79. Paris, 1858.

A question of great importance is, *When should the depilation be stopped?* There is no doubt that one depilation would be sufficient were all the hairs removed entire, and the parasiticide efficiently applied; but there is great difficulty in removing all of them owing to their friability, and the depilation thus requires to be repeated. Each successive depilation, however, becomes less serious; for we generally notice, after one extraction, that the disease is extinguished at some parts, and reappears only here and there, at those places, namely, where the hairs have broken in attempting to remove them. The best rule to follow is to omit *all* local treatment for a couple of weeks after the head has been gone over, by which time we can see at what parts the disease reappears, and it is at these places only that the depilation is again resorted to. After a little experience one can readily distinguish where the disease is eradicated, and where the treatment can be dispensed with. When the hairs shoot out with all the appearance of health, their previous friability and twisted appearance being gone, and when the skin assumes its natural appearance, we can then withhold the forceps, and confidently expect a permanent cure. It must, however, be borne in mind that, long after the spores have been destroyed, secondary symptomatic eruptions may continue which do not require further depilation, but treatment founded on general principles, and varying according to the nature of the eruption. It requires very little clinical experience to distinguish the symptomatic eruptions from those peculiar to the parasitic affection.

The treatment may extend over a period of from six to eighteen weeks, especially if the disease is at all extensive, and the epilator not very experienced; but in this time the most obstinate cases should be radically cured: and this is what can never be effected, as far as my experience goes, under any other treatment whatsoever. I am well aware that, in hospital practice, many physicians are content with removing crusts, and applying stimulating washes, attending to the general health, and dismissing the patients with clean heads and apparently cured, after a couple of weeks' treatment; but these are not instances of cure at all, for when the local applications are stopped the crusts soon reappear.

I am occasionally informed by medical friends, who are sceptical of the value of epilation, that they have met with patients treated by me as out-door patients who were not cured. But every one who has to do with the treatment of the poor must be aware that many of them do not attend regularly, nor carry out the treatment prescribed perseveringly; and they are far more willing to ascribe the want of success to the physician than to their own short-comings. These cases, then, form no argument against epilation, but only prove that when this treatment is not thoroughly carried out it altogether fails in its object.

3rd. The extraction of the hair by means of epilating sticks has recently been recommended by Dr. L. Duncan Bulkley of New York. The formula for this preparation is as follows:—

℞ Ceræ flavæ, ...	ʒiij.	
Laccæ in tabulis, . . .	ʒiv.	
Resinæ, ...	℥vi.	
Picis Burgundicæ, . . .	℥x.	
Gummi Dammari, . . .	℥iss.	—*M*

This is melted and rolled into sticks varying from ¼ to ¾ inch thick, and cut off in lengths of 2 or 3 inches. The hair having been cut off close to the surface and the crusts removed, the end of a stick, softened by heating it over a spirit lamp, is pressed firmly and with a rotary motion against the skin, and left there for a minute or two until it cools; it is then torn off with a rapid movement, and in the direction contrary to that in which the hair is growing, when it will generally be found that most of the hairs have been extracted, their bulbs projecting from the end of the stick like a brush. In this way the head can be rapidly gone over, after which any hairs which have escaped the process may be removed with the forceps, and this is the practice which I generally adopt at the present time.

The extraction of the hairs by means of the calotte has long been celebrated, and is still practised in France to a considerable extent. This consists of a plaster, which is prepared in the following way:—"About 4 ounces of rye flour are mixed with a pint and a half of white vinegar in a pan; this is then put on the fire, and the mixture stirred continually; to it, when it boils, is added half an ounce of the carbonate of copper in powder. The whole is then boiled for an hour, after which 4 ounces of black pitch, 6 of Burgundy pitch, and 4 of resin are added; when thoroughly mixed and melted about 6 ounces of antimonial ethiops are put in, and the mixture is stirred continually till it has assumed a suitable consistence. This plaster is then spread upon strong cloth."* It is employed thus:—The hair is cut as short as possible, the crusts removed by means of cataplasms, and the plaster applied in strips so as to fit the head accurately. It is left on for a few days, so that the hairs in growing become firmly adherent to the plaster. The end of each strip is then seized and suddenly and forcibly removed, dragging along with it a number of hairs. The operation is repeatedly performed, and extends over a considerable period. The practice has sometimes proved successful, but only when the whole of the diseased hairs were removed. Unfortunately, however, in many cases this cannot be accomplished, and in many others the operation is too painful and cannot be borne, and instances of death from this cause have been recorded.

The method of removing the favus crusts before proceeding to epilation is by the use of cataplasms, or by the application of oil, which softens them, and causes them to swell and lose their attachments to the skin, after which they may be scraped off with a spatula. Instead of oil, Hebra sometimes made use of alcohol, which has exactly a contrary effect upon the favus crusts, causing them to shrink, and thus lose their attachments, when they fall out, or are removed with the spatula.

It now remains to make some mention of the best parasiticide applications.

Küchenmeister made a series of very interesting experiments, in order, as he says, "to test the parasiticidal effects of the most urgently recommended remedies," and he found that alcoholic solutions acted most powerfully in this manner:—At his request applications of alcohol were made to the heads of some patients affected with favus by Hebra, and apparently with great success.† Notwithstanding this statement of Küchenmeister's, I find in a later publication that Hebra considered the application of the so-called parasiticides as useless, there being, he says, no medicine which is known to act in this way.‡ This opinion is not shared, however, by most dermatologists.

Of late years Sir Joseph Lister has proved most conclusively the great value of carbolic acid in arresting decomposition in wounds; and the theory which he gives of its action is that it destroys parasitic germs, which he believes to be the cause of the decomposition. It occurred to me that this must be the remedy, of all others, for the vegetable parasitic affections of the skin. I am bound, however, to confess that I have been very much disappointed with the result of my experiments. In cases of favus, for example, I have had the head shaved, the crusts removed, and the whole scalp covered with strips of lint soaked in a solution of one part of crystallised carbolic acid in four of almond oil. These were changed daily, and the treatment was continued uninterruptedly for the space of three months, during the whole of which time a carefully fitting oil-skin cap was used. As long as the treatment was continued there was no return of the disease; but as soon as it was stopped the fungus grew as luxuriantly as ever. It had, therefore, no more effect than the application of almond oil alone, or of a common poultice.

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* *Traité Pratique des Maladies de la Peau*, par Alph. Devergie. p. 533.

† "Manual of the Animal and Vegetable Parasites." *Syd. Soc. translation*, vol. ii., p. 258.

‡ *Allgemeine Wiener Medizinische Zeitung* for 1858, p. 31.

In an article by Dr. Prior, of Bedford,* intended to illustrate the curability of favus by means of carbolic acid, four cases are alluded to; but it is quite evident by his own showing, that, at the time the article was written, not a single one of them was cured.

Sulphur in one or other of its forms, is, however, a good parasiticide; and the hyposulphite of soda and sulphurous acid promise good results as aids to epilation. Shoemaker's mercuric oleate ointment and chrysophanic acid ointment (grs. x to ℥i) are likewise to be recommended. Those which are most used in France, and especially by Bazin, are oil of cade and corrosive sublimate. Of these I have most faith on the whole in the perchloride of mercury and chrysophanic acid.

In the preparation of parasiticides the best excipients are water and glycerine, or the glycerine of starch (*Glycerinum amyli* of the British Pharmacopœia) or lanolin. The strength of the parasiticide is a point of great importance. Sulphur may be used in the proportion of half a drachm to an ounce. Sulphurous acid and oil of cade may be used undiluted, or the latter may be mixed in varying proportions with glycerine, if the pure oil is too stimulating. The hyposulphite of soda is best employed dissolved in water in the proportion of a drachm, and corrosive sublimate in the proportion of 2 grains to the ounce.

Whichever of these parasiticides is employed must be rubbed into the skin during each depilation, as previously mentioned; and, after the depilation is completed and the disease apparently cured, it should be continued for some time.

Bennett, who is of opinion that the disease is parasitical, but occurs in scrofulous constitutions, recommends the use of cod-liver oil internally. Locally also, after the removal of the crusts with poultices, he applies cod-liver oil, which, as he says, by excluding the air, causes the death of the parasite. I am told, however, by my friend

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* "The Treatment of Porrigo Favosa by Carbolic Acid," by Charles E. Prior, M.D., Bedford. *Brit. Med. Journ.*, Oct. 26, 1867, p. 358.

Professor Grainger Stewart (formerly Dr. Bennett's clinical assistant) that this treatment is merely palliative, and certainly the cases cited in Dr. Bennett's valuable work on *Clinical Medicine* (second edition, pp. 790–794) are not very encouraging.

The remarks above made apply to favus attacking the hair follicles. In the epidermic variety depilation is not so necessary, the application of a parasiticide lotion, as a solution of the perchloride of mercury, being usually sufficient to remove it, unless favus cups are present, in which case the hairs passing through them must be removed.

When the disease attacks the nails the treatment is also simple. It is necessary to destroy gradually by means of a small file the portion of nail covering the favus matter, and after arriving at it the application of a parasiticide is quite sufficient to destroy the fungous growth.

After what has been said it will be seen that the local is the only treatment capable of effectually curing favus: but at the same time, in this, as in all local diseases, the general health must be attended to, and any deviations from a natural state corrected when possible. Cleanliness must, above all, be insisted on, combined with the use of good food and the enjoyment of exercise, pure air, &c. In most cases, too, a long-continued course of cod-liver oil, either alone or in combination with one of the preparations of iron, is of service, and especially when, as so often happens, there is a decidedly strumous taint.

The principles of treatment above sketched out are always efficient in curing even the worst cases of favus; and, when they come to be universally practised, cases of favus described as incurable will cease to be recorded, for, since the depilatory treatment of Bazin has been instituted, the word incurable, as regards favus, has become quite inapplicable.

2. TINEA TRICOPHYTINA.

Syn.—*Dermatomycosis tricophytina*—*Ringworm.*

Parasite, the Tricophyton.

This affection is met with amongst all classes of the community, and with considerable frequency. In my own practice it occurred 90 times in 2,000 private, and 1,411 times in 38,054 public cases of skin diseases.

There are four varieties of this disease, viz.:—(*a*) Ringworm of the head; (*b*) Ringworm of the body; (*c*) Ringworm of the beard; (*d*) Ringworm of the nails.

The following are the microscopical characters of the tricophyton:—The spores are roundish, pretty uniform in size, about $\frac{1}{7000}$ inch in diameter, and are either isolated or more frequently in chains, while the tubes are scanty in proportion to the spores (see Figs. 43 and 44). When the hairs are affected they become very much thickened; the bulbs become more and more disorganised, and are at last destroyed altogether. The hairs are apt to break near the surface of the skin, their ends having a ragged appearance like pieces of wood broken across. The longitudinal fibres of the hairs are separated by masses of spores (see Figs. 45 and 46), which at some points may be in such profusion as to lead to the formation of nodosities. The medullary portion of the hair becomes disorganised, and, owing to the pressure exerted upon it by the fungous growth, ultimately disappears altogether. M. Sabouraud, House Physician to M. Besnier, has recently demonstrated two varieties of tricophyton in ringworm, the T. microsporon (in 60 per cent.), and the T. megalosporon (in 40 per cent.) The spores of the former are small, not lying in a visible mycelium, but arranged without order, filling the hair, and even extending beyond its edges, giving the appearance of a sheath; while those of the latter are large, lying in a visible mycelium, arranged in distinct lines, and do not extend beyond the edges of the hair. Ringworm, due to the T. microsporon, is much more obstinate than that resulting from T. megalosporon, and it is only the latter which is capable of giving rise to ringworm of the body and beard.

This disease is much more contagious than tinea favosa, especially in the case of children, and in those who are debilitated and scrofulous, but it occurs amongst all classes of the community, and is not so directly favoured as in the case of the latter disease by inattention to cleanliness. It can readily be produced by inoculation.

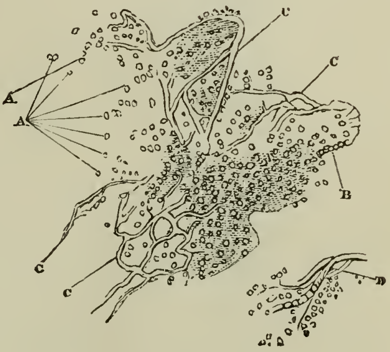

Fig. 43.

A, Spores; B, Spores in chains; C, Tubes; D, Jointed tubes.

The first variety of *Tinea tricophytina* to be described is—

(*a*) *Ringworm of the head* (Tinea tonsurans—T. tondens — Trichonosis furfuracea—Porrigo furfurans — Herpes tonsurans).—This variety is met with almost exclusively in children, and very rarely in adults. According to Thin this is due to the firmer texture of the root-sheaths in adults, and to the comparative absence of moisture between the inner root-sheaths and the hair. It commences in the form of minute, red, slightly elevated, round spots; these gradually increase in size, become scaly, and are sometimes the seat of minute vesicles (hence the term Herpes tonsurans). At the outset the affection is a mere surface affair, but as it advances and involves the hairs the diseased condition of the latter becomes the great feature of the complaint. They become dull, dry, twisted, and are easily extracted; they are also brittle—so much so that they have a tendency to break off within a line or two of the surface. The patch, if it continues round, which is not always the case, thus resembles a tonsure (hence the name Tinea *tonsurans*). The surface and stumps of the hair have a tendency in this stage to be covered with a characteristic greyish-white powder (the fungus), and often there is slight elevation and puffiness of the skin, which is marked by little prominences from engorgement and elevation of the orifices of the follicles, thus resembling the skin of a plucked fowl (Mahon). Bazin lays great strength on the colour of the affected surface, which is bluish or slate-coloured in dark subjects, greyish, reddish, or yellowish in fair persons, being thus in marked contrast to the colour of the healthy skin in the vicinity. In a few cases the scaliness of the patches disappears, and the hair falls off, so that smooth bald patches are left, almost identical with, and apt to be mistaken for, those of alopecia areata (see p. 47).

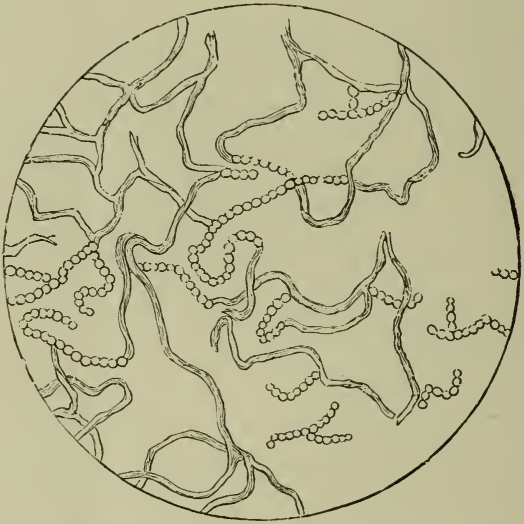

Fig. 44.

Showing tubes, jointed tubes, and chains of spores of Tricophyton.

In the advanced stages of the disease the inflammatory action may run higher, and small swellings may form from infiltration of the subcutaneous cellular tissue, somewhat similar to those met with in typical cases of ringworm of the beard. These are the seats of numerous foramina—the gaping orifices of the hair follicles—from which a glutinous honey-like fluid exudes, which may glue together the surrounding hairs; but the hairs springing from the surface of the swellings are generally broken off close to the skin and very easily detached. They are apt to be mistaken for subcutaneous abscesses, and opened, but, instead of pus, a sticky albuminoid fluid escapes. As was remarked by Tilbury Fox, they correspond in every respect with the kerion of Celsus.

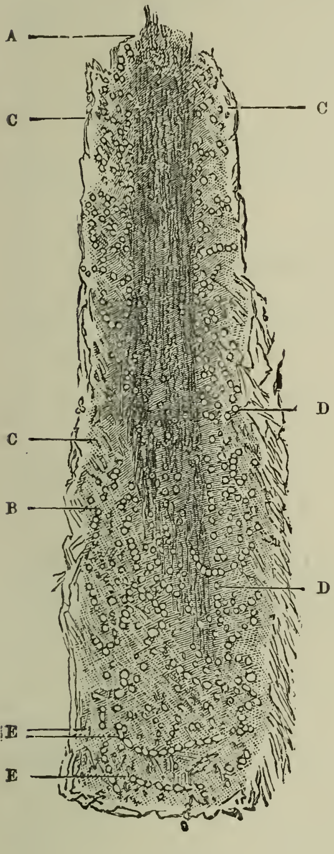

Fig. 45.

Hair from a case of tinea sycosis—A, rupture of superior extremity of hair; B, rupture of inferior extremity of hair; C C C, epidermic tunic of the hair; D D, isolated spores; E E, chains of spores (Bazin).

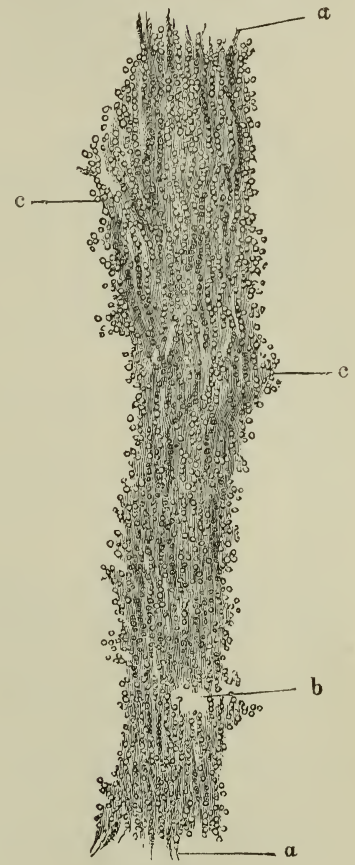

Fig. 46.

Hair from a case of tinea tonsurans, loaded with spores—*a a*, broken ends of hair; *b*, rupture of longitudinal fibres; *c c*, ragged edges of hair.

In other cases the eruption is complicated by the development of pustules, which dry into crusts, and an eczema impetiginodes is sometimes induced, which may lead to errors of diagnosis, by obscuring the primary affection. Ringworm of the head may continue for an indefinite time; indeed, when it attacks a family of children, it may be years before it finally takes its leave: at the same time it may terminate spontaneously, occasionally after obliteration of some of the hair follicles, and more or less permanent alopecia, though this is generally not of any great extent. Throughout the complaint there is usually some itchiness, though not nearly to the same extent, as a rule, as in cases of eczema, with which it may be confounded.

The following table should aid the diagnosis :—

Tinea favosa capitis.	**Tinea tonsurans.**
1. Often seen in adults, although usually *commences* in early life.	1. Rarely, if ever, met with in adults.
2. May be combined with favus of the skin.	2. May be combined with ringworm of the body.
3. Favus cups detected, or reappear if head untouched for a couple of weeks.	3. No cups detected, but many hairs broken off close to the skin.
4. The achorion detected with the microscope.	4. The tricophyton detected with the microscope.
5. If disease of old standing, usually considerable permanent alopecia.	5. Alopecia, when present, slight, as a rule.
6. On epilation, hairs come away more readily than in health, but with their bulbs and capsules entire.	6. Hairs apt to break on attempting to extract them, or to come away without their bulbs.

Chronic Erythema (Pityriasis) capitis.	**Tinea tonsurans.**
1. Oftenest met with in adults.	1. Rarely, if ever met with in adults.
2. Generally diffused, frequently affecting the whole head.	2. More patchy — commonly more or less circular, and never implicates the *whole* head.
3. Hairs not diseased, although apt to come away on combing and thus to produce much temporary thinning of the hair.	3. Hairs discoloured, brittle, much thickened, twisted, or broken off close to the scalp.
4. No parasite to be detected.	4. Epithelial *débris* and hairs loaded with the fungus.
5. Itching usually marked, and scales often fall in abundance upon the shoulders.	5. Itching usually moderate, and scales do not fall upon the clothing.

6. Not contagious.	6. Very contagious, and often other members of the family exhibit one or other of the varieties of ringworm.

Eczema impetiginodes capitis.	**Tinea tonsurans.**
1. Patches not circular, though may appear so owing to the hair having been cut away with the scissors around each.	1. Patches generally tend to assume the circular form.
2. Hairs healthy (though they may fall out here and there), and exhibit no parasite.	2. Hairs brittle, thickened, discoloured (sometimes white)—twisted, or broken off close to the scalp : loaded with the fungus.
3. Itching usually great.	3. Itching usually moderate.
4. Eczematous eruptions often on other parts of the body.	4. Ringworm often on the body as well.
5. Not contagious.	5. Very contagious, especially to children ; and other members of the family may exhibit ringworm of the head or body, or less frequently of the beard.

As before remarked, the complication of ringworm with eczema of the head is not uncommon, especially in the case of delicate children, and the former is very apt to be overlooked. The history of the case, however, the commencement of the disease in circular dry patches, and the frequent evidences of contagion, should arouse our suspicions ; a search should then be made for the little characteristic stumps of hairs which are thickened, discoloured, and twisted ; and a careful microscopic examination, both of the hairs and epithelial *débris*, should be made, which will settle the point. In cases in which there is any doubt as to the disappearance of all diseased hairs, Duckworth's plan may be adopted which consists of pouring a little chloroform upon the scalp, when, after evaporation, any hairs which may be still diseased will be found, with the aid of a glass, to be quite white.

The diagnosis of *Psoriasis capitis* from tinea tonsurans should not be difficult. The former is not contagious ; the hairs are not affected ; no parasite is to be found ; the patches are redder, and with very distinctly circumscribed margins ; the scales are thicker and more silvery ; and generally (not always) typical patches of psoriasis are met with on other parts, notably on the elbows and knees. The disease, too, more frequently occurs in very healthy-looking persons, is very frequently observed in adults, and has a great tendency to relapse, especially in spring and in autumn.

(*b*) *Ringworm of the body* (Tinea circinata—Herpes circinatus).—This form is most frequently met with in children, although it is by no means uncommon in adults, in whom it is apt to occur as a complication of ringworm of the beard, especially on the back of the wrist and over the manubrium sterni, from rubbing the chin with that part. Among 38,054 consecutive cases of skin disease there were 261 cases of Tinea circinata, besides 165 of T. circinata and sycosis, and 44 of T. circinata and tonsurans.

It commences as little round, rose-coloured, slightly-elevated spots, unsymmetrical, which soon become scaly and itchy. These, which may attack any part of the surface, but which are most frequently on the uncovered parts of the body, gradually increase in size, and, so long as the disease is advancing, the spreading edge is usually distinctly elevated. As each patch increases circumferentially, it tends to heal in the centre, so that rings of eruption are left, which may even be 4 or 5 inches in diameter, the enclosed skin being nearly healthy or, exceptionally, the seat of fresh patches. When the tendency to recover is well marked, the healing in the centre proceeds more rapidly than the spreading at the edges, so that the rings become incomplete, leaving segments of circles, which, in their turn, by degrees disappear. If the inflammatory action runs high, the elevation of the patches may be considerable, and they may be the seat of vesicles (hence the term Herpes circinatus), or even of pustules. This affection not unfrequently terminates spontaneously, the fungus being very superficial, and, as Bazin has remarked, apt to die from want of nourishment. The subjoined tables may be of service in diagnosis.

Tinea favosa epidermidis.	Tinea circinata.
1. Circles of eruption comparatively small and pretty uniform in size.	1. Circles of eruption more variable in size, and may be several inches in diameter.
2. Often yellow streaks mixed with the epithelial *débris*.	2. Absence of yellow streaks among the epithelial scales.
3. On microscopic examination the achorion detected.	3. On microscopic examination the tricophyton detected.
4. Often accompanied by favus of the head.	4. Often accompanied by ringworm of the head or beard.

When, in the case of tinea favosa epidermidis, the fungus penetrates into the hair follicles, and yellow cup-shaped crusts, in consequence, make their appearance, the diagnosis of favus is no longer doubtful.

Lichen circumscriptus.	**Tinea circinata.**
1. Not contagious, and no fungus to be detected amongst the scales.	1. Contagious, and fungus detected if the disease is seen in the *early* stage and before treatment commenced.
2. May be complicated with eczema seborrhoicum on head and on other parts of the body.	2. Often complicated with ringworm of the head, or less frequently of the beard.
3. Patches small, very slightly elevated, and, while healing in the centres, spreading at the edges less marked.	3. Patches distinctly elevated while the disease is advancing, and tendency to heal in the centres and spread at the edges more decided.
4. When eruption occurs in rings, they are smaller as a rule, and generally seen on front and back of the chest.	4. Rings of eruption often of considerable size, and most common on uncovered parts of the body.

Erythema circinatum syphiliticum.	Tinea circinata.
1. Generally symmetrical, being due to a constitutional cause.	1. Generally unsymmetrical, being due to a local cause.
2. No itching as a rule.	2. Itching the rule.
3. Eruption generally coppery in the chronic stage.	3. Not coppery, but rosy in tint.
4. No fungus to be found.	4. Fungus to be detected in the advancing stages.
5. Other manifestations of syphilis on the skin or elsewhere.	5. Often complicated with ringworm of the head, or in adult males with ringworm of the beard.
6. History of syphilitic infection.	6. History of exposure to infection from others, or from the lower animals suffering from ringworm.

Lepra: the Circular Variety of Psoriasis.	**Tinea circinata.**
1. Symmetrical.	1. Non-symmetrical.
2. Has a special tendency to attack elbows and knees.	2. Special tendency to attack uncovered parts, and not the elbows and knees.
3. Scales thick, imbricated, very adherent, silvery, and contain no parasite.	3. Scales thin, loosely attached, not silvery, and in the early stage fungus detected.
4. Not contagious.	4. Contagious.

The disease described by Hebra under the name of *Eczema marginatum* (Tinea cruris sen axillaris, Crocker) has been proved to be a mere variety of ringworm, and due to the presence of the same parasite, the tricophyton (see Figs. 47 and 48).

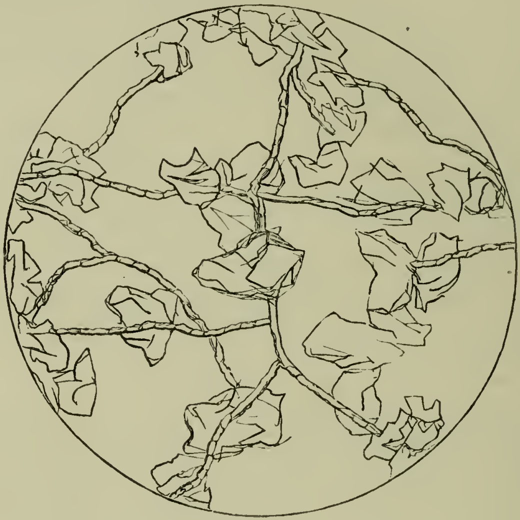

Fig. 47.

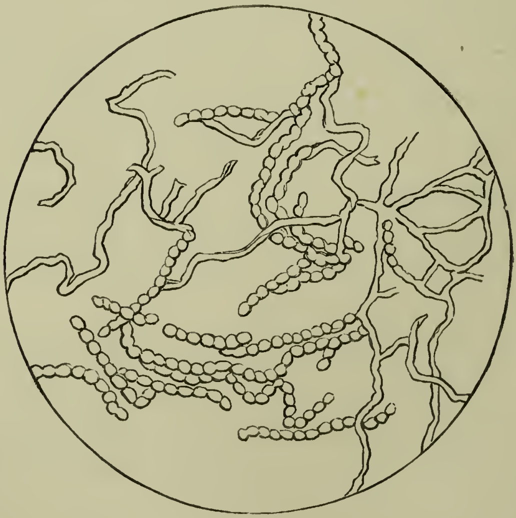

Fig. 48.

That this is the case has been conclusively proved by Köbner, who inoculated himself with some of the scales, and in two or three weeks thereafter very beautiful rings of tinea circinata (ringworm of the body) made their appearance, the epithelial *débris* from which was found to be loaded with the tricophyton. Although not uncommon in this country, it is oftener encountered in warm climates—hence the terms "Burmese ringworm," "Chinese ringworm," &c., often applied to it.

It commences generally on the inside of the thigh where it is in contact with the scrotum, as a small, round patch, which is red, elevated, itchy, and which, as the result of friction and the moisture of the parts, may become the seat of papules, vesicles, excoriations, or crusts, thus putting on an eczematous character. This patch, by-and-by, heals in the centre, leaving the enclosed skin more or less deeply pigmented, while it extends circumferentially until it may reach the size of the palm or more. Sooner or later similar patches are apt to form in the vicinity, and to run the same course, and these may coalesce with the circle first formed in such a way that, at last, a huge circle of eruption may result, extending nearly to the umbilicus above, the knee below, and the sacrum behind. Often inside this circle new ones form in a concentric manner, or the surface may be studded with numbers of minute rings, and in many cases similar patches are detected on other parts of the body.

According to Hebra, this eruption occurs almost exclusively in shoemakers and dragoons, but I have met with it in persons of various occupations; and the reason why the insides of the thighs are favourite seats for it, and why it is there apt to put on the eczematous character, are the heat and moisture and friction to which these parts are exposed.*

(*c*) *Ringworm of the Beard* (T. sycosis—Sycosis parasitica—Mentagra parasitica).—As its name implies, this variety is exclusively met with in adult males. It is almost always traced to a "foul shave" in a barber's shop; indeed, while I have seen multitudes of such cases, I have never met with one in which the patient always shaved at home, unless when communicated by other members of the family suffering from ringworn. It is oftenest met with on, or in the vicinity of, the chin (hence the term sycosis menti, sometimes applied to it), or other hairy portion of the face; but any hairy part may be attacked, although on the head the disease partakes of the characters of tinea tonsurans. Among 2,000 consecutive cases of skin diseases in private, I encountered 11 of T. sycosis; and among 38,054 hospital cases there were 424 of T. sycosis, besides 165 of T. sycosis combined with T. circinata.

It commences as small erythematous spots, which often heal in the centre and spread at the circumference, leaving rosy circles or segments of circles covered with furfuraceous desquamation. Many of the hairs springing from the affected surface are found to be broken off close to the skin, and can be pulled out with the utmost facility, as easily as a pin can be pulled out of a pin-cushion; and often they are of a white colour, owing to being covered with the whitish fungous matter. Frequently the case is not seen until the disease—at some parts at all events—is more advanced; then papules and pustules are apt to form at the orifices of the follicles; the deeper structures, too, become involved, and indurations occur, surmounted by pustules, resembling those of acne indurata. Finally, if the cellular tissue becomes deeply implicated, larger indurations may make their appearance, which are frequently covered with crusts, on removing which fleshy-looking masses are exposed to view, the surfaces of which are not unlike the pulp of a fig (hence the term sycosis, derived from *συκον*, a fig). These, when present, are very characteristic; but it is right to mention that, in this country at least, the more aggravated forms of eruption described are often absent.

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* For further particulars see author's volume, *On the Parasitic Affections of the Skin.* Second Edition, p. 76. Churchill, 1868.

In the advanced stages the hair becomes even more diseased (see Plate at the beginning of book); it has lost its shining appearance, is thickened, its colour is altered, it is very brittle, and tends to break off on a level with the skin, leaving little blackish stumps, which stud the tubercles, and which are so loose that they can be extracted without the patient feeling it in the least. Under these circumstances the fungus is apt to be destroyed by the inflammatory process, so that we cannot always find it in those hairs which we happen to select for examination. Often too, in neglected cases, some of the hair follicles are obliterated, and a certain amount of permanent alopecia may result. Occasionally, large segments of circles of ringworm (Tinea circinata) extend round the front of the neck beneath the beard from ear to ear, and patches of ringworn are not uncommon on other parts, especially over the top of the sternum and on the wrist, owing to the patient rubbing his chin against them.

The disease which is most apt to be mistaken for ringworm of the beard is pustular eczema of the hairy portions of the face (Eczema pilare facici—Impetigo menti—Sycosis non-parasitica). The following points, however, should prevent error :—

Eczema impetiginodes.	**Tinea sycosis.**
1. A very common affection.	1. Much less common, although by no means rare.
2. Not contagious.	2. Highly contagious.
3. Initial lesion pustules at the orifices of the follicles, which dry into yellow crusts.	3. Initial lesion small erythematous spots, healing in the centre and spreading at the edges.

4. When fully developed, skin is reddened, infiltrated, and studded with pustules or crusts. Tubercles are uncommon, and large indurations never observed.	4. These same characters may be present to a certain extent, but, in addition, large tubercles and fleshy indurations are apt to appear studded with stumps of hairs.
5. Hairs unaffected, adhere firmly, and are extracted with pain, though, in neglected cases, some permanent alopecia may result from deep suppuration or the pressure of the crusts, especially in strumous subjects.	5. Hairs thickened, their colour altered, brittle, and apt to break off close to the skin, and many can be pulled out without the slightest uneasiness. Some permanent alopecia a much more frequent concomitant.
6. No parasite to be detected.	6. The tricophyton discovered in some of the scales and hairs.
7. Occasionally a similar eruption is seen elsewhere, especially on the head at the edges of the hair, on the eyebrows, and on the edges of the eyelids.	7. Sometimes patches of ringworm detected on the neck, or on other parts, particularly over the top of the sternum and on the wrists.

The following points serve to distinguish syphilitic eruptions from ringworm of the beard :—

Syphilitic Eruptions of the Beard.	**Tinea sycosis.**
1. History of syphilitic infection, it may be many years before.	1. History of having been shaved at a barber's shop, or occasionally of ringworm in other members of the family.
2. Eruption more circumscribed and patchy.	2. Eruption more diffused, as a rule.
3. Coppery tint of the patches sometimes distinct.	3. Colour of the eruption dusky red.
4. Crusts often greenish in tint.	4. Crusts brownish.
5. No parasite to be detected.	5. Tricophyton discovered in some of the hairs or scales.
6. Hairs healthy.	6. Hairs affected in the manner formerly mentioned.
7. Other manifestations of syphilis often found elsewhere.	7. Ringworm occasionally found on other parts, or in other members of the family.

(*d*) *Ringworm of the Nails* (T. tricophytina unguium onychomycosis).—This is an exceptional condition, and, when it does occur, usually only one or two of the nails at their anterior extremity are involved. The affected nail gradually loses its transparency, becomes opaque, dry, discoloured, and thickened, and near its free extremity is separated from its bed by a mass of soft nail-substance. As the disease advances the nail becomes very brittle, the longitudinal striæ become very marked, and it has a great tendency to split longitudinally. The fungus, which is found beneath the nail, and which is readily proved to be the tricophyton by microscopic examination, has a greyish-white colour, while that of favus is yellow, and presents different microscopic characters, as formerly mentioned.

It is right to state that other diseases of the nails, such as those frequently met with in eczema, psoriasis, lichen ruber, &c., present very similar appearances—so much so that the diagnosis can only be made by a reference to the character of the accompanying eruption, and by a microscopic examination of the nails.

The **treatment** of ringworm need not occupy much space, as many of the remarks made when treating of favus apply equally to the cure of this disease. It will be necessary, however, to speak separately of its different varieties.

In cases of *Tinea circinata* (Ringworm of the body), as well as of the so-called *Eczema marginatum*, which seems to be a variety of ringworm of the body, the parasite has but a feeble hold upon the skin, and the downy hairs are but to a small extent impregnated with the parasite. If the person affected be very hairy, it may be necessary to remove the hairs; but the application daily of one of the stimulating lotions or ointments formerly mentioned (see treatment of Tinea favosa) is generally sufficient to effect a cure.

If these fail, however, and more especially if the circles are few in number, the application of blistering fluid is very beneficial. The preparation which I am in the habit of using is Smith's emplastrum cantharidinis liquidum, and occasionally acetum cantharidis prepared with glacial acetic acid. Whichever is used should be painted on the eruption with a small brush. One application is usually sufficient if vesication has been effected, but it may require to be repeated in a week or ten days. Other vesicating fluids may be used, which are equally serviceable. Thus, Startin was in the habit of employing Bullen's vesicating fluid, I believe, and I have tried the application of a piece of lint soaked in a solution of the perchloride of mercury (in the proportion of 10 grains to the drachm of alcohol), and retained *in situ* for a couple of minutes. I do not use this much now, however, as there is some risk of salivation; although the perchloride, when used as a vesicant, seems, as a rule, to have much more of a local than of a constitutional action. Liniment of iodine is also a useful application.

When there are a great many patches of ringworm scattered over the body they may be treated by means of sulphur or mercurial vapour baths, which act upon the whole skin, and thus attack all the patches at once; or the eruption may be scrubbed twice daily with black soap, by which means the parasite is to a great extent mechanically removed, the inflammatory symptoms are subdued, and the affection frequently cured.

Tinea sycosis (Ringworm of the beard) must be treated both by depilation and the application of one of the stimulants before mentioned, 2 grains of the perchloride of mercury dissolved in an ounce of distilled water with the aid of a drachm of glycerine being one of the best. When the morbid process runs very high, and there is a great deal of suppuration and induration, it is, according to some, better to commence the treatment by soothing applications, such as cataplasms of potato-starch combined with purgatives. I am quite certain, however, that it is better as a rule to proceed to depilation at once, for the best way of removing the irritation is to remove the cause; and, besides, the hairs are much more easily extracted while the inflammation and suppuration are considerable. In the early stages of the disease, depilation causes considerable pain, and, although well performed, some of the hairs usually break, leaving the diseased bulbs in their follicles, so that a second or third depilation, although only a partial one, is generally required. When treated in the advanced stages, after the formation of pustules and indurations, although the inflammatory and suppurative processes have almost completely destroyed the parasite, the depilation is just as necessary. For, although the fungus is in great measure destroyed, the diseased ends of the hairs, remaining in their diseased and abnormally secreting follicles, act as foreign bodies and keep up the inflammation. At this advanced stage of sycosis, the results of depilation are often astonishing. The hairs are removed with the utmost facility, and one depilation is sometimes sufficient; but it must be combined with the application of a parasiticide lotion or ointment. In the eyes of those who have not previously witnessed cures from this treatment, the rapidity is almost incredible with which a chin twice its ordinary size, and covered with large tubercles, indurations, and crusts, sometimes becomes, in the space of a few weeks, perfectly healthy in appearance, with this exception, that here and there patches of alopecia are left, which may be permanent; but this is not the fault of the treatment, but of the patient in having neglected to apply for advice in the earlier stages of the disease.

In the treatment of sycosis many are in the habit of applying caustics and vesicants. Those which are most recommended are the concentrated nitric acid, a saturated solution of chromic acid, and the glacial acetum cantharidis. They are painted over the tubercles alone (and not over the whole chin) after the removal of the crusts by means of oil. They require to be frequently repeated, cause much pain, and are apt to lead to permanent alopecia by destroying the hair follicles, while they are not nearly so general nor so rapidly effectual as the treatment by depilation.

Arsenic has always been a favourite medicine in the treatment of sycosis, and its use, combined with cod-liver oil, was highly extolled by Hunt, who seemed to look upon it almost in the light of a specific. I can easily conceive that this remedy, so powerful in many other cutaneous affections, may act beneficially in changing the state of system favourable to parasitic development; but I can hardly think that it can cure the disease, unless, by changing the composition or qualities of the blood, it causes the death of the parasite, or unless the latter has died out, and a simple inflammation remains. Besides, in examining the illustrative cases cited by Hunt, I am left in doubt as to the nature of the affection.

In the treatment of *Tinea tonsurans* (Ringworm of the head) some are in the habit of trusting solely to the daily application of the stimulating and parasiticide lotions or ointments, previously referred to. Scrubbing the affected parts night and morning with black soap is likewise beneficial, as it removes mechanically a large quantity of spores, and acts as a stimulant to the skin. The soap should not be washed off till the next application is about to be made. Devergie was in favour of the application of oil of cade, or of a strong solution of nitrate of silver in the proportion of a drachm to 9 drachms of distilled water. The last is a favourite popular remedy in this country, both for ringworm of the head and body. Nayler speaks highly of a treatment recommended by Mr. Coster (Medical Superintendent of the London District Medical School, Hanwell), which consists in saturating the part with the aid of a piece of sponge with the following mixture :—

℞ Iodini pur., ...	℥ij.
Ol. picis (sp. gr. 853), . . .	℥i.

—*M. et solve.*

(The iodine and oil of tar should be gradually and carefully mixed, otherwise a considerable amount of heat will be generated, and the iodine dissipated.) “In the course of a week or ten days,” says Mr. Coster, “the scurf skin separates, and generally leaves a healthy surface beneath. I usually find one application is sufficient to effect a cure, when the disease is recent; but if it be very chronic, or of several months' duration, it needs to be repeated perhaps three or four times."*

A method of treatment which is often successful is blistering the affected parts, when they are not too extensive, once a week for several weeks; but neither this nor the last-mentioned treatment is nearly so efficacious in ringworm of the head as in ringworm of the body. Dr. James Foulis, of Edinburgh, recommends the following treatment:—"The child affected," he says, "is made to sit down on a chair before a washing-basin half filled with warm water; a folded towel is first of all tied round the child's forehead in such a way that no fluid poured on the head can trickle down into the eyes.

"It is best to cut the hair short all round the affected part. If there be many spots of ringworm the whole head may be closely cropped. Have ready a 2-ounce bottle of common spirits of turpentine, an ounce-bottle of tincture of iodine, a camel's-hair brush, and a 10 per cent. cake of carbolic acid soap.

"While the child bends forward over the basin, the spirit of turpentine is freely poured over one or more spots at a time, the forefinger being used to rub the turpentine well into the scalp. Almost immediately the dirt and greasy scales disappear, and the short broken hairs are seen to stand up like bristles. Generally, in about three minutes' time, the child cries out, 'Oh, it nips!' Then, we know that the turpentine has penetrated deeply. Immediately the piece of carbolic acid soap is well rubbed into the parts which have been acted on by the turpentine, and warm water is freely applied to make this soap a lather, by which means the head is well washed, and soon appears to be beautifully cleaned. The smarting, such as it is, quickly disappears after the application of the soap. The head is then well dried with a towel. Common tincture of iodine in two or three coats is now painted well over the affected parts, and allowed to dry. As soon as the hair is dry some carbolic oil (1 in 20) is rubbed all through the hair to catch such spores as may be there.

"This treatment, applied every morning, or morning and night in very bad cases, cures the worst cases in the course of a week. During the last five years, I have used no other method of treatment. The explanation of its success is as follows:—Common spirit of turpentine is a powerful germicide, but it is a still more powerful solvent of the sebaceous or greasy matter of the scalp, the affected hairs included, and clears the way for the application of a still more powerful germicide—namely, tincture of iodine.

"It is an interesting chemical fact that spirits of turpentine, or, more correctly, oil of turpentine, is a powerful solvent of iodine. This solution of iodine in turpentine is a most powerful germicide, and quickly destroys the fungus of ringworm. If tincture of iodine be applied to the spots which have been treated as above, first with spirits of turpentine, and then washed with carbolic acid soap and water, it finds its way down into the epithelial tissues and into the hair follicles, following the course the spirits of turpentine has taken. It is no use to apply watery solutions of germicides until the greasy or sebaceous matter of the scalp has first been removed." *

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* *A Practical and Theoretical Treatise on Diseases of the Skin*, by George Nayler, F.R.C.S.E. p. 123. London: Churchill, 1866.

Chrysarobin is much prized at the present time, and may be used in the following way, as recommended by Unna:—

1. Cut the hair of the whole head short.
2. Protect the neighbouring skin (brow, temples, ears, and nape) with zinc gelatine (p. 172).
3. Apply to the head a 5 to 10 per cent. ointment of chrysarobin.
4. Cover the head, and half of the neighbouring skin which is protected with the zinc gelatine, with guttapercha paper or the like, and fix it with zinc gelatine.
5. Apply a bandage over the whole, and then a closely fitting flannel cap.

Every day remove the dressings, wipe the head dry, and re-apply the ointment.

Dr. Dockroll speaks highly of hydronaphthol, which he uses as follows:—Have the head completely shaved, leaving the usual fringe all round; then wash with a 5 per cent. soap of hydronaphthol, using water as hot as can be borne. After drying the scalp, apply over the affected area a 10 per cent. plaster of hydronaphthol in narrow strips, letting each strip overlap its fellow, taking care that the plaster extends quite half an inch beyond the margin of the diseased patch. Outside the margin of the plaster paint a layer of a 10 per cent. hydronaphthol jelly (when melted) so as to exclude all air. At the end of four days remove the plaster, when the diseased stumps will be found adhering to it. Repeat all the previous process, applying for one week a 20 per cent. plaster. Repeat the process, this time applying the 10 per cent. plaster for ten days, when on removal the disease will be found to be cured. During the plaster treatment, apply a 5 per cent. ointment to the unaffected portions of the head night and morning. Care should be taken that all articles brought in contact with the head before treatment be destroyed, otherwise reinfection will take place, and the treatment be brought into discredit.

I prefer, however, in most cases to combine one of the above methods of treatment with the extraction of the hairs. The hair of the whole

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* *Brit. Med. Journ.*, March 14, 1885.

head should always, if possible, be cut short, as otherwise some of the patches, which are often very minute, may be overlooked, and the disease thus allowed to spread. The extraction of the hairs at the edges of the patches should first be effected, and from the edges the epilation should be extended inwards towards the centre. It will be found, however, that, while the hairs at the edges come away entire, those in the centres of the patches are almost certain to break, the diseased roots being left in the follicles. But we must just content ourselves with pulling out as many as we can, and the epilation must be frequently repeated; for, after a while, the hairs gradually become more healthy, and at last come away entire. (For the manner of pulling out the hair, the way of combining epilation with the application of parasiticides, &c., see treatment of T. favosa, p. 563.)

Wilson objected to the term parasiticide, and also to the theory and practice of epilation. "The sectaries of the parasitic theory, using the same remedies, call them parasiticides, and believe that they effect a cure by immolating the parasitic vegetation; and the medical parasiticides of France go the length of pulling out every individual hair from the diseased skin, and, after clearing a small space, saturating it with the bichloride of mercury solution. They find this process more speedy and certain, not to say painful, than the application of simple stimulant remedies; but they forget that in tearing the hair from its pulp they are merely employing a stimulant remedy of a very effectual kind, and one which has been found most useful in other diseases of the hair follicles besides trichonosis." * There is no doubt a great deal of truth in the above remarks, but I must confess that, as regards epilation at all events, the explanation given does not sufficiently account for the benefits it confers.

In the treatment of inveterate circumscribed patches of ringworm of the head, Dr. Alder Smith † advises the cautious application of croton oil. It is painted over a patch about the size of a shilling at a time with the aid of a small camel's-hair brush. If it does not set up severe inflammation it should be repeated daily for from three to ten days (with constant bathing with warm water, and frequent poulticing with linseed meal), until such an amount of inflammatory exudation has been set up, that the patch resembles true kerion. Then the croton oil part of the treatment is omitted, and when the tenderness has abated, and the yellow incrustation has been removed by bathing, all the hairs and stumps which still remain on the patch can be readily removed with the forceps. This treatment is only to be used in very

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* *On Diseases of the Skin*, by Erasmus Wilson, F.R.S. Ed. vi., p. 746. London: Churchill. 1867.

† *Ringworm: its Diagnosis and Treatment*, p. 50. London: H. K. Lewis, 1880.

obstinate cases, and should on no account be attempted in the case of very young or delicate children, for, apart from the risk of inducing permanent alopecia, it is not altogether free of danger.

When a patient presents himself with ringworm of the head, our first duty is to insist that everything which has come in contact with it in the shape of brushes, combs, linings of bonnets, &c., should be destroyed, after which no articles of value should be used, so that there need be no hesitation in destroying them at short intervals, until the cure is complete.

In ringworm of the body and of the beard local treatment is generally sufficient to effect a cure, but in ringworm of the head constitutional treatment is frequently required. Everything must be done to improve the general health—a generous diet, tonics and cod-liver oil being often indicated. In obstinate cases a change of air, and especially a residence at the sea-side, may do more than medicine to eradicate the complaint.

Dr. Henry J. Reynolds, of Chicago, recommends, in the treatment of tinea tonsurans and sycosis (as well as T. favosa), the application to each patch (for several minutes daily) of a sponge electrode soaked in a 1 per cent. solution of perchloride of mercury, and attached to the positive pole of a continuous current battery, the negative electrode being applied in the vicinity. From five to ten cells, or such as the patient can allow with comfort, should be used, the electrodes should be kept firmly applied, and the sitting should not last longer than ten to fifteen minutes when the head is the part affected. He advises this treatment on the principle that fluids through the galvanic current move towards the negative from the positive pole, so that a greater absorption and deeper penetration of the perchloride takes place. Within three weeks, he says, the cure should be complete.*

In the treatment of *ringworm of the nail*, it is necessary to file away the nail, so as to reach the fungus which lies beneath. It should then be scraped off as far as possible, after which the use of a lotion of perchloride of mercury will complete the cure.

3. TINEA VERSICOLOR.

Syn.—*Dermatomycosis furfuracea—Pityriasis versicolor—Mycosis Microsporina.*

Parasite, the Microsporon furfur, discovered by Eichstädt in 1846.

The following are the microscopical characters of the parasite, which is situated in the most superficial layers of the epidermis, and is generally present in great abundance, these parts being usually loaded with the spores and tubes of the fungus :—The spores refract the light strongly, are nearly circular, very uniform in size, larger than those of the tricophyton, and are collected into little clusters like bunches of grapes. These groups are nearly equally apart, and are connected by a network of tubes, a few of which only are jointed. The tubes are of great length, but, in order to demonstrate this, we must resort to some such plan as that suggested by Gudden—viz., blister the skin, and put a portion of the cuticle thus separated under the microscope. Spores and tubes are also found on the hairs and in them, though to a much less extent than in ringworm. The appearance of this fungus under the microscope is so characteristic as to enable the experienced observer to make a diagnosis form the microscopic examination alone (see Fig. 49).

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* *Monatshefte für praktische Dermatologie*, No. 1, 1887.

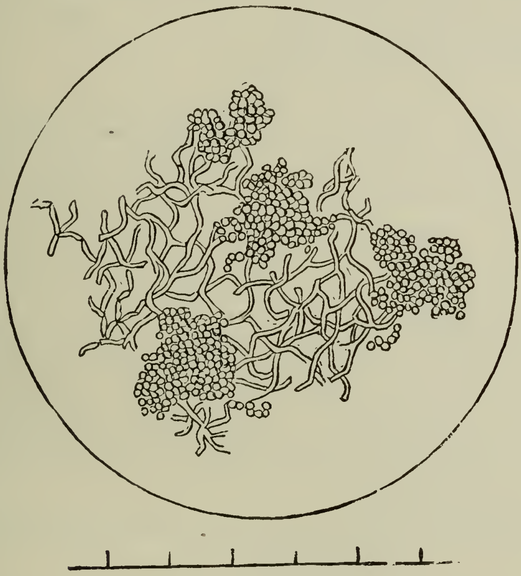

Fig. 49.

Shows the clusters of spores and the tubes of the Microsporon furfur.

This is a common affection in adults. Statistics show that of 2,000 of my private cases of skin disease there were 19, and of 38,054 hospital cases 424 of T. versicolor. But this gives little idea of its actual frequency, because patients often ignore it. It is inoculable, and, to a certain extent, contagious, though many persons are little susceptible to its influence; hence we often meet with husbands who do not communicate it to their wives, and *vice versâ*. A certain soil seems necessary for the development of the fungus; it is most apt to flourish on the skins of scrofulous persons; hence we often find it in patients labouring under phthisis. It seems probable, however, as Sir William Jenner has remarked, that this is partly owing to the heat and moisture of the skin, and to the tendency among phthisical patients to wear the same flannel day and night, and to neglect the habitual washing of the body for fear of aggravating the lung affection.

This affection is very rarely seen upon the face; it almost invariably commences on the front of the body (generally on the chest), from which it often spreads to the extremities; and, when we chance to see the patient, it occasionally happens that the eruption has, in great measure, vanished from the front of the body, which it first attacked, and is chiefly located on the extremities.

It commences in the shape of minute round yellow spots about the size of pin-heads; these gradually increase in size and number, and coalesce, forming irregular patches, often of great extent, and frequently enclosing islands of healthy skin of varying size and shape. Generally, however, at the edges of these patches some of the minute initial isolated spots are to be seen, which are very characteristic. The eruption has a yellowish or brownish colour owing to the colour of the fungus, but in coloured races it produces a white or greyish discoloration of the skin. It is little, if at all, elevated. It is frequently the seat of very fine desquamation, or, if not, on scraping or scratching the surface, it readily assumes a scaly appearance; itching is usually moderate in degree, but, if the parasite is not in a state of activity it may be absent altogether.

The following tables may be of use in the diagnosis of doubtful cases:—

Vitiligo.	**Tinea versicolor.**
1. A mere irregularity in the distribution of the pigment of the skin, which is defective at some parts, excessive at others, and shows no signs of inflammation.	1. An inflammatory affection, generally more or less itchy and scaly, and *may* be *very slightly* elevated.
2. The islands of pale-coloured skin are whiter than the healthy skin of other parts, being devoid of pigment.	2. The islands of skin, often enclosed by the patches of eruption, are of the same colour as the healthy skin of other parts.
3. No minute yellow spots to be detected at the edges of the brown patches.	3. At the edges of the patches generally small pin-head spots of eruption.

4. If hairy parts attacked, hairs growing from the white patches are white, being devoid of pigment.	4. Hairy parts rarely attacked, and any hairs growing from enclosed islands of healthy skin retain their colour.
5. On scraping the surface nothing comes away.	5. On scraping the surface scales come away loaded with the parasite.
6. No possibility of spreading by contagion.	6. Sometimes distinct evidences of contagion.
7. *May* be congenital or nearly so, though often commences in adult life.	7. A disease of adult life, and never congenital.
8. Difficult to cure.	8. Easily cured by the application of parasiticides, friction, &c.

Chronic Erythema in the scaly stage—often called Pityriasis.	**Tinea versicolor.**
1. Colour of patches red.	1. Colour of patches yellow or brown.
2. Scales more abundant, thicker and larger.	2. Scales scanty and very fine.
3. No fungus to be detected, and disease not contagious.	3. Fungus readily discovered, and affection contagious, though not markedly so.
4. No minute spots of eruption to be seen at the edges of the patches.	4. At edges generally pin-head spots of eruption discovered.
5. May occur on any part.	5. Always commences on, and often limited to, the trunk; never on the face.

Syphilitic Erythema.*	**Tinea versicolor.**
1. *May* appear on any part.	1. Always commences on trunk.
2. Colour of patches coppery in the chronic stage.	2. Colour of patches yellowish or brownish.
3. No minute spots of eruption at the edges of the patches.	3. At the edges of the patches generally pin-head spots of eruption.
4. Not itchy.	4. Generally itchy to some extent.

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* Tinea versicolor is often mistaken for syphilis on account of the brownish colour of the eruption, and because it is apt to occur in syphilitic subjects, such a soil being favourable to the growth of the parasite.

5. No fungus to be detected in the scales.	5. Scales loaded with fungus.
6. Usually history of contraction of syphilis weeks or months before.	6. Perhaps history of contagion by sleeping with another person similarly affected.
7. Other signs of syphilis discovered—*e.g.*, alopecia, ulceration of throat, gland enlargements, nocturnal pains, &c.	7. None of these signs discovered, though constitution often delicate or phthisical.

Ephelis (Chloasma), previously described (p. 25), has been confounded with tinea versicolor, but the former is merely an excessive deposit of pigment, oftenest observed upon the face, especially upon the brow, and has no connection with the latter, which almost never occurs on the face, and cannot in reason be mistaken for it.

The **treatment** is very simple and efficacious. Attention must be paid to the general health, and any apparent deviations from the normal standard corrected; besides which, we must attack the local affection by local means, and this constitutes the principal part of the treatment. In cases where there is much hair on the affected parts, depilation has been recommended; but this is never necessary, because the disease attacks the trunk in the great majority of cases, which is only abundantly supplied with hair in persons who are very hairy; and, besides, the parasite has very little tendency to implicate the hairs to any extent.

Generally, the application of a solution of perchloride of mercury (two grains to the ounce of water), or hyposulphite of soda (ʒi to ℥i of water), to the affected parts twice daily, and continued for some time after the eruption has disappeared, is effectual. Mercurial or sulphur vapour baths have the same effect, and a very good and efficient mode of treatment is to combine the application of a mercurial lotion with the use of a sulphur or mercurial vapour bath. Care must be taken in the case of the latter to avoid salivation, which is altogether unnecessary, and therefore improper: it is, however, little likely to occur. The eruption can often be removed in a short time, by causing the patient to scrub himself thoroughly with black soap, or Unna's marble soap, night and morning in a bath, care being taken that all the diseased parts are scrubbed with the soap, followed by thorough friction with a rough towel. Instead of black soap alone, which the higher classes often object to, the following mixture may be employed:—

℞ Hydrargyri perchloridi, . . .	℈i.	
Saponis viridis, ...	℥iij.	
Spiritûs rectificati, ...	℥ij.	
Ol. lavandulæ, ...	℈i.	—*M.*

This is to be used night and morning, exactly in the same way as the black soap. I always direct the patient to stop at once if the gums become sore; but, although I have often used this mixture, I have never seen any sign of absorption of the mercury. Unna recommends an ointment composed of 5 parts of lanoline, 10 of lard, and 10 to 20 of solution of bisulphide of lime. The other parasiticides mentioned under the head of T. favosa and T. tricophytina are also effectual. But whichever is employed must be *scrubbed firmly* into *the whole* of the affected parts, and great attention must be paid to *the continuance* of its application *for some time after* the eruption has disappeared, else relapses are pretty sure to occur.

In cases where there have been many relapses, arsenic has been given internally, and persevered in for some time with the view of changing the state of system favourable to the growth of the fungus.

Finally, great attention must be paid to cleanliness during and after the cure. Flannel which has been used should either be laid aside altogether, or washed in water containing a parasiticide, or put into boiling water. The patient should also change his underclothing very often, and in no case should he sleep in it.

4. TINEA IMBRICATA.

Syn.—*Tinea desquamans* (Turner)—*Tokelau Ringworm.*

In the first annual report of the Samoan Medical Mission for 1868-69, kindly sent me by Dr. George A. Turner, that gentleman refers to a cutaneous affection under the name of herpes desquamans. Dr. Turner subsequently (1871) recognised its parasitic origin, and altered the name to tinea desquamans. It is called by the Samoans Lafa Tokelau, or Tokelau ringworm, because it is said by them to have been imported from Tokelau, or Bowditch Island. To the latter place it seems to have been carried about ten years before by a copper-coloured man, said to be a native of Tamana, one of the Gilbert group. His name was Peter, and hence the disease was then called Le Peta.

It is met with in warm, damp, equable climates, in both sexes and at all ages, and is markedly contagious: it is very much dreaded by the natives, so much so, that when it seems to be commencing they frequently cut out the affected part, or destroy it with the moxa. "It is," says Dr. Turner, "a scaly disease—much more like ichthyosis in its general appearance than any other disease with which I am acquainted. The scales, however, differ from those of ichthyosis in that they are not disposed in squares; they run in concentric circles, and may be well represented by taking a sheet of stout cardboard and shaving the upper layer of it in such a way as to make it curl up in circles (see Fig. 50). The rings of desquamated cuticle are about a quarter of an inch apart."

The same disease, apparently, is described under the name of tinea imbricata in an admirable pamphlet, kindly forwarded to me some time ago, by Dr. Patrick Manson. He tells us that it is principally met with in the Straits of Malacca or islands of the Malay Archipelago, or

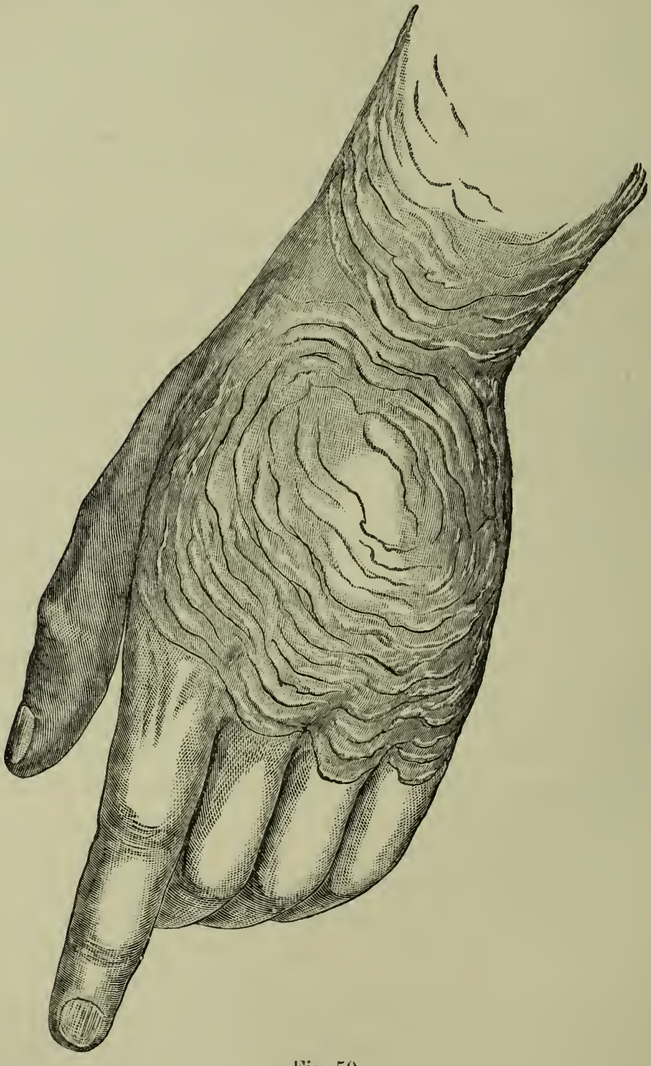

Fig. 50.

Tinea desquamans. The disease extended up the arm, and in fact covered the whole body excepting the head, fingers, and a patch between the shoulders.

as an importation from these parts; and "it would appear that some peculiarity of climate is necessary for the ready spread of the disease from person to person."

He has demonstrated its parasitic nature, and has favoured me with a specimen of the epithelial scales from one of his patients, which are loaded with the fungus, and from which the accompanying woodcuts have been taken (see Figs. 51 to 62). He confirms Dr. Turner's opinion as to its contagious nature, and has been successful in inoculating it in three cases. "After inoculation . . . there is an incubation period of about nine days. At the end of this time the fungus has multiplied sufficiently to slightly elevate the epidermis under which it is growing, and form a brown mass between it and the corium.* When this has attained a diameter of about three-eights of an inch, the epidermis in the centre gives way; but, as it is still organically continuous with the sound skin at its margin, it is not completely shed, but remains a fringe round the central hole. By friction or other means the free edge of the scale is from time to time removed; and the brown central fungus, and the tissues it is mixed with, now no longer protected by a closely adhering epidermis, are rubbed off as far as the attachment of the scale, and the exposed corium appears pale. Just beyond this point the advancing fungus shows through the epidermis as a brown rim, perhaps very slightly elevated, about one-sixteenth of an inch in breadth When the entire ring thus formed has attained a diameter of about half an inch, a brown patch is again seen to be forming at its centre; this in its turn also cracks the young epidermis over it, and a second ring is formed inside the first, which it follows in its extension. A third brown central patch is formed in the centre of the second circle, and behaves in exactly the same manner, and so on with a fourth, fifth, and never ending series of concentric rings."

He believes ordinary ringworm (Tinea tricophytina) to be quite distinct from tinea imbricata, and, whereas inoculation with the fungus of tinea tricophytina produces ringworm, inoculation with that of tinea imbricata produces tokelau ringworm, but never ordinary ringworm. The former attacks specially "those parts of the body which are usually covered with hair, as the scalp, axilla, pubis; the latter, on the contrary, avoids these situations." The Chinese have very seldom a strong crop of hair on the front of the chest, on the small of the back, or legs and arms; yet these situations, so frequently covered with hair in the European, are, strange to say, shunned by the fungus of tinea imbricata. If, however, tinea imbricata has spread on to a hairy part,

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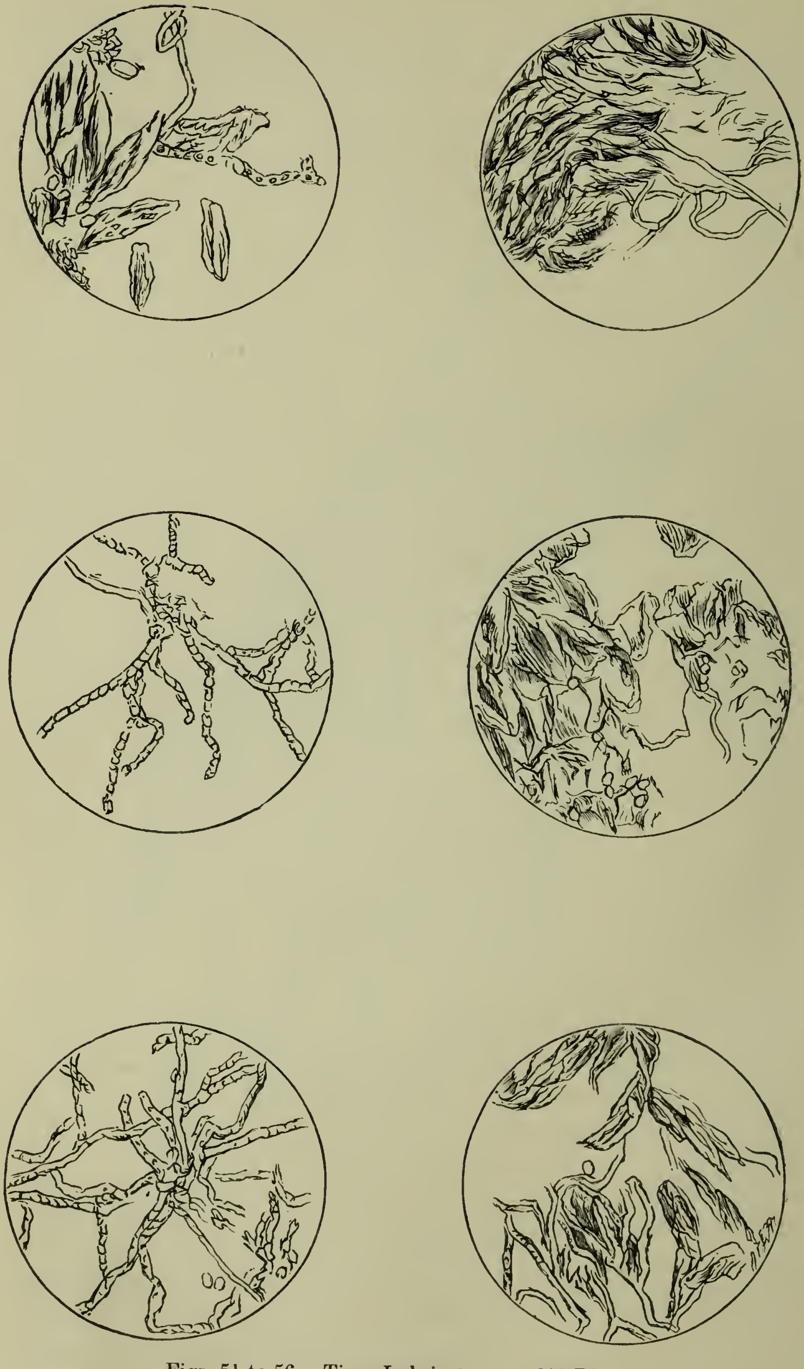
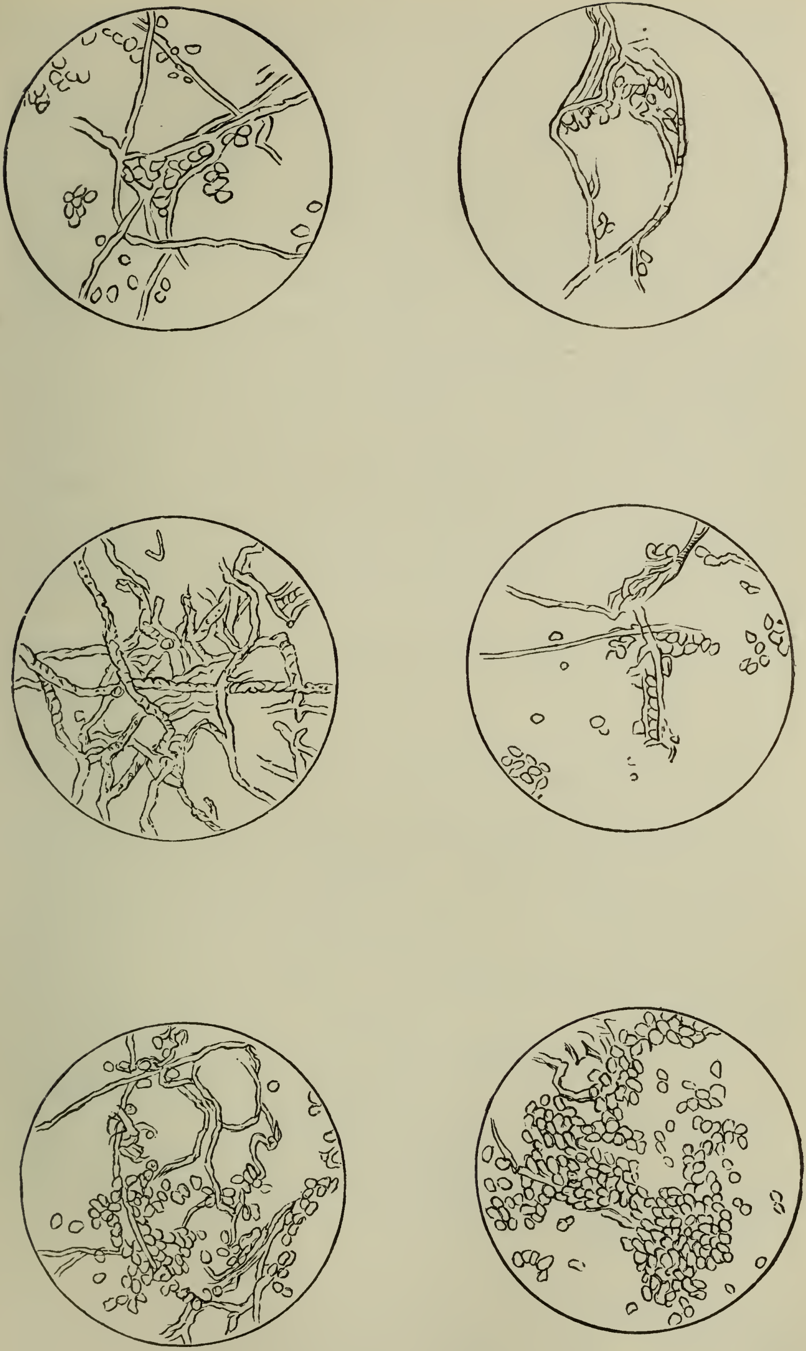
* The brown colour is due to little granules in the interior of the mycelial filaments



Figs. 51 to 56.—Tinea Imbricata. × 300 Diam.



Figs. 57 to 62.—Tinea Imbricata. × 300 Diam.

the hair follicles are not invaded by the fungus, as in ringworm, and the hair continues firmly implanted, glossy, and natural.

Again, tinea imbricata, if it has been in existence any length of time, involves a very large surface, as an entire limb or side of the trunk, or oftener still, if not checked, nearly the whole surface of the body. Tinea circinata, though sometimes including in its rings large areas, yet by its nature is hindered from attacking at any one time the entire skin, as an interval must elapse before a second ring can follow the first. In point of fact, in tinea circinata, though there may be several rings in existence at one time, and some of them include a very large area, yet we seldom have to deal with surfaces more than six inches in diameter, and usually they are much smaller.

The disease advances over the skin at about the rate of a quarter of an inch weekly; this is about the rate of progress in tinea circinata also. As advancing rings spread, their regularity is modified by the shape of the parts, the nature of the skin they travel over, and by encountering other systems of rings. Thus after a time the plan is lost or obscured, while the pattern of the disease, so to speak, is everywhere preserved.

The following table shows the difference, according to Manson, in the microscopical appearances in the two diseases :—

Tinea circinata (*Ringworm of the Body*).	Tinea imbricata.
1. Involves the surface of the corium as well as the epidermis.	1. Does not extend deeper than the mucous layer of the epidermis, and does not attack the hair.
2. Fungus scanty.	2. Fungus present in very great abundance.
3. Spores very scanty in proportion to mycelium.	3. Chains of spores much more numerous than mycelial threads.
4. Spores globular in form.	4. Spores about the same size, but oval, rectangular, or irregular, rarely globular.
5. Mycelial threads generally short, with numerous swellings and constrictions, and other irregularities in outline.	5. Mycelial threads generally long, straight, or gently curved.

Dr. Turner agrees with Dr. Manson as to these two diseases being quite distinct. Ordinary ringworm of the body existed in Samoa long before this variety was introduced, and the two diseases are now to be met with side by side, the difference in their appearance to the naked eye being unmistakable.

The first mention of this disease appears to be in the *History of Sumatra*, by Marsden, in 1811. He says—"There is no circumstance by which the natives of this island (Pulo Nias) are more obviously distinguished than the prevalence of a leprous scurf, with which the skin of a great proportion of both sexes are affected; in some cases covering the whole of the body and limbs, and in others resembling rather the effect of the tetter or ringworm, running, like that complaint, in wavy lines and concentric curves."

It was also described by the Medical Officers of the United States Exploring Expedition, under Commodore Wilkes, in the "Narrative" of that expedition published in 1841. Writing of the Kingsmill Group, it is said, "A kind of cutaneous disease called the Qune prevails extensively; this at some stages of the disease resembles the ringworm. It begins with this appearance, in a small circle, about an inch in diameter, covered with a scurf; the ring probably increases in size, and when it becomes large a smaller one forms within it, and in this way the affection continues to spread. Several circles often form on the body within a short distance of each other, the rings meet and become confluent, producing a variety of curved lines and concentricial circles. The whole body becomes at length covered with the scurf, which is always attended by painful itching."

The same disease, apparently, is described by Sir William Macgregor, of New Guinea,* as having been met with by him at Fiji, though principally amongst the foreign labourers from the Solomon Islands, the New Hebrides, and Lime Islands. He also made out its parasitic nature, but his description of the fungus does not quite tally with that of Dr. Manson, in so far as he maintains that "the filaments are much more abundant than in tinea circinata, and the spores smaller and less numerous."

It thus appears that this disease is widely distributed over the islands of the Pacific Ocean, and the Malay Archipelago.

Let me add, in conclusion, that in my whole experience I have not met with an instance of this disease, and it is very probable that it has never made its appearance in this country.

The treatment of tinea imbricata must be conducted on the lines laid down in connection with that of ringworm of the body.

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* *Glasgow Med. Journ.*, July, 1876, p. 343.

ON THE NON-IDENTITY OF THE PARASITES MET WITH IN TINEA FAVOSA, TINEA TRICOPHYTINA, AND TINEA VERSICOLOR.

It is curious to note the variety of opinion which prevails amongst scientific men as regards the so-called vegetable parasitic affections of the skin. Thus some, with Wilson at their head—whose opinions must always command respect [*]—hold that there are no such diseases, the plant-like structures met with in favus, ringworm, &c., not being fungous growths at all, but mere degenerations of the normal elements of the skin. Others, while admitting the presence of fungi in these diseases, hold that they are not essential, but accidental formations; and many are of opinion that they are not peculiar to them, but are met with more or less in almost all chronic skin diseases.[†] Then there are those, with Devergie for their leader,[‡] who lean to the theory of spontaneous generation as applied to them; and lastly, the camp is pretty equally divided between those who believe that several fungous growths are concerned in the production of the parasitic affections of the skin, and those who maintain that they are due to the presence of one and the same parasite.

In the volume published by me a good many years ago on the parasitic affections of the skin, I endeavoured to prove the correctness of Bazin's view, which was contrary to the belief of dermatologists in this country—that tinea tonsurans (Ringworm of the head), tinea circinata (Ringworm of the body), and tinea sycosis (Ringworm of the beard), are all due to the presence of one and the same parasite, the tricophyton;[§] and all my subsequent experience has tended to confirm the opinion which I then expressed—an opinion which, it is gratifying to observe, has been pretty generally accepted by the profession. There are not a few, however, who go farther than this, who hold that there is only one parasite productive of *all* the vegetable parasitic affections of the skin, amongst whom may be mentioned the names of Hebra, Tilbury Fox,[||] Lowe, and Jabez Hogg,[¶] to whose writings I must refer the reader for the arguments in favour of such an opinion, as the following remarks are devoted almost exclusively to those favouring the opposite view.

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[*] "On the Phytopathology of the Skin and Nosophytodermata, the so-called Parasitic Affections of the Skin" (*British and Foreign Medico-Chirurgical Review*, January, 1864). See also a pamphlet, in answer to this paper, entitled *The Nature of the so-called Parasites of the Skin*, by W. Tilbury Fox, M.D. 1864.

[†] See an article, by Mr. Jabez Hogg, in the *Lancet* for March 26, 1859.

[‡] *Traité Pratique des Maladies de la Peau*, par Alph. Devergie. Ed. ii., p. 51 et 501.

[§] *The Parasitic Affections of the Skin*, by T. M'Call Anderson, M.D., p. 46, 1861.

[||] *Skin Diseases of Parasitic Origin*, by W. Tilbury Fox, M.D., p. 99, *et seq.*

[¶] "Further Observations on the Vegetable Parasites, particularly those Infesting the Human Skin" (*Quarterly Journal of Microscopical Science*, January, 1866, p. 10), by Jabez Hogg, F.L.S., M.R.C.S., &c.

But, before proceeding further, it may be well to state that, as there is a difference of opinion amongst those dermatologists who admit a group of parasitic affections of the skin, as to whether alopecia areata (Porrigo decalvans) is a parasitic disease or not, it is advisable to leave that affection out of consideration in the present discussion, in order to avoid confusion. So that the task which I propose to myself now is to lay before my readers the arguments in favour of the view that the *Tricophyton*, the parasite met with in the three varieties of ringworm (viz., Tinea tonsurans, Tinea circinata, Tinea sycosis), the *Achorion Schönleinii*, the parasite of tinea favosa, and the *Microsporon furfur*, the parasite of tinea versicolor, are not identical, but distinct fungous growths.

First of all, let us view the proofs of non-identity, as these are displayed in the *results of inoculation.*

1. *Results of Inoculation with the Achorion Schönleinii* (the Parasite of Tinea favosa).—This parasite has been repeatedly inoculated with success, and, amongst others, by Hebra, Rémak, Vogel, Bazin, Gruby, Köbner, and Deffis. Bennett thus described a case in point:—

"In the summer of 1845 one of the gentlemen in attendance at the Royal Dispensary volunteered to permit his arm to be inoculated. A boy, called John B., aged eight, labouring under the disease (Favus), was at the time the subject of lecture, and a portion of the crust, taken directly from this boy's head, was rubbed upon Mr. M.'s arm, so as to produce erythematous redness, and to raise the epidermis. Portions of the crust were then fastened on the part by strips of adhesive plaster. The results were regularly examined at the meetings of the class every Tuesday and Friday. The friction produced considerable soreness, and, in a few places, superficial suppuration. Three weeks, however, elapsed, and there was no appearance of favus. At this time there still remained on the arm a superficial open sore, about the size of a pea, and Mr. M. suggested that a portion of the crust should be fastened directly on the sore. This was done, and the whole covered by a circular piece of adhesive plaster, about the size of a crown-piece. In a few days the skin surrounding the inoculated part appeared red, indurated, and covered with epidermic scales. In ten days there were first perceived upon it minute bright yellow-coloured spots, which, on examination with a lens, were at once recognised to be spots of favus. On examination with the microscope, they were found to be composed of minute granular matter, in which a few of the cryptogamic jointed tubes could be perceived. In three days more the yellow spots assumed a distinct cupped shape, perforated by a hair; and, in addition to tubes, numerous sporules could be detected." *

Of three cases inoculated by Deffis, the epidermic variety of favus—the crusts exhibiting the achorion microscopically—was produced twice, and a typical favus cup once, and the average period of incubation was ascertained to be about forty days. The true favus cups are only formed when, by inoculation, some of the fungus can be brought into contact with a hair follicle; hence the epidermic variety is more frequently produced. Köbner inoculated himself on the forearm with the parasite of favus, and there resulted well-marked favus cups,† which he exhibited at the Medical Society at Breslau. Gruby also tried the effects of inoculation. He deposited some of the fungus on the bark of an oak in full vegetation, and there developed a favus cup identical with that which grows on the head of infants, and which was exhibited at the French Institute.‡

2. *Results of Inoculation with the Tricophyton* (the Parasite of Tinea tricophytina, or Ringworm).—The experiments with this parasite have been on a much less extensive scale than those with the achorion, but as far as they go, they lead to the same conclusion. Thus, M. Deffis, encouraged by the success of his inoculations with favus matter, essayed some inoculations with the tricophyton in 1856, in which he was completely successful, characteristic patches of ringworm being produced; and similar inoculations were made with the tricophyton by Köbner on his own and on Dr. Strube's forearm, and also upon rabbits, which resulted likewise in the development of ringworm.§

3. *Results of Inoculation with the Microsporon furfur* (the Parasite of Tinea versicolor).—The inoculation of the microsporon furfur has not as far as I am aware, been attempted, or at all events the results have not been communicated by any one, except by Dr. Heinrich Köbner, who inoculated himself with it upon the skin covering the sternum, and produced an eruption of tinea versicolor.‖

Now, of all the inoculations which have been made upon man, animals, or plants, with the achorion, the tricophyton, and the microsporon furfur, many, of course (owing to defective inoculation, unsuitableness of soil, or the like), have proved abortive; but I think I am correct in stating that, amongst the many cases of successful inoculation, not a single one has resulted in the production of any other parasitic disease than that from which the parasite was taken. In other words, when the inoculations were successful the achorion always gave rise to tinea favosa, the tricophyton to tinea tricophytina, and the microsporon furfur to tinea versicolor.

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* *Clinical Lectures on the Principles and Practice of Medicine*, by H. Hughes Bennett, M.D. Ed. ii., p. 799.

† *Klinische und Experimentelle Mittheilungen aus der Dermatologie und Syphilidologie*, von Dr. Heinrich Köbner, Arzt in Breslau. p. 21. Erlangen, 1864.

‡ *Loc. cit.*, p. 526. § *Loc. cit.*, p. 23. ‖ *Ibid.*, p. 24.

So much, then, for the results of inoculation.

In the second place, let us glance at the *clinical proofs* of the non-identity of these parasites.

There are very few dermatologists of note who now deny the contagious nature of tinea favosa, tinea tricophytina, and tinea versicolor. Amongst the many cases of vegetable parasitic affections of the skin treated at the Hospital for Skin Diseases, Glasgow, there were numerous examples of this; but there was not a single instance of one of these diseases giving rise, by contagion, to one of the others. And this is just what one would have expected, seeing that artificial inoculations point so conclusively the same way. And here it must be mentioned that those who are not well versed in the diagnosis of skin diseases are apt to fall into the error of confounding the appearances of the first stage of favus with fully developed ringworm, and thus to arrive at the opinion that these two diseases are present on the skin at the same time. That there are instances of the coincidence of ringworm and favus on the same person at one time—a delineation of which is published by Hebra—no one can deny, but it is equally certain that they are very rare, for I have never met with a single case of the kind; so that they no more constitute proofs of the identity of these diseases than do instances of co-existence of psoriasis and ringworm—a case of which I met with the other day—of the identity of these two affections. Then, if we study the appearances of the three affections when fully developed, it would be difficult to name any three skin diseases which are more dissimilar; and this I may say with the greatest confidence, that I have never seen a transition of one of these diseases into one of the others. It is but fair, however, to state that my experience differs in this respect from that of Dr. Tilbury Fox, who wrote as follows:—

"Tinea favosa (Favus) can be produced from bad cases of tinea tonsurans, on a minor scale, by keeping up such an amount of irritation as, being less than sufficient to destroy the fungus, shall lead to the effusion of blastematous fluid (be it pustular, vesicular, or other), in which the plant will vegetate rapidly for a while, producing a crust depressed in its central part, and completely riddled by hairs in various stages of disease; the crust itself being composed of the normal elements of the part, effused fluid, and parasitic growth." *

As I have just said, this state of matters is totally at variance with my own experience, and I cannot help suspecting that some error has crept into the inquiry.

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* *Lancet*, September 10, 1859.

In the third place, let us view for a moment the proofs derived from a *microscopic examination,* which I hold, however, to be of very secondary importance, and which cannot have nearly the same weight as several of those previously advanced, for, in structures so minute, it is difficult, even with all the light which is shed upon them by the most perfect instruments, to appreciate with precision the differences which may exist between them. And yet, as far as my experience goes, the differences between the microscopical appearances of the *achorion,* the *tricophyton,* and the *microsporon furfur* are very considerable. Thus, to take an instance derived from the spores, those of the achorion are, on an average, about the 3000th of an inch in diameter, and many of them are oval; those of the tricophyton, on the other hand, are much smaller, being, on an average, about the 7000th of an inch in diameter; while the spores of the microsporon furfur, although nearly as large as those of the achorion, are more uniformly rounded, have a lustrous appearance, and have a remarkable and characteristic tendency to run together, so as to form clusters, like bunches of grapes. Other differences in the microscopical appearances I might mention, which must be familiar to those who have carefully studied the subject of parasitic diseases of the skin with the micsoscope; but it is unnecessary to enlarge further on this subject, holding, as I do, that the proofs derived from a microscopical examination are of secondary value in the determination of the point at issue; and I conclude with the observation that, if carefully prepared microscopical specimens of the *achorion,* the *tricophyton,* and the *microsporon furfur,* and of these only, were handed to me, and I were allowed to use my own microscope, I could generally arrive at a correct diagnosis of the disease from the microscopical appearances alone.

It was only the other day that my friend Dr. Irvine handed to me a paper containing some epithelial scales and fine hairs, with the request that I should examine them with the microscope, and give him my opinion of the nature of the skin disease from which they were taken. This I did, and pronounced it to be a case of tinea versicolor—an opinion which proved correct. This fact is cited, not to show that I am possessed of any extra skill in the use of the microscope, but merely in verification of the above statement.

Lastly, we come to the proofs derived from a branch of inquiry in which I have for some time been deeply interested—namely, *the occurrence of vegetable parasitic skin diseases amongst the lower animals, and their transmission to the human subject.* And first of all, as regards favus, I may be allowed to transcribe the following case from a previous publication, a case which was first published by Bazin:—*

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* *Leçons Théoriques et Cliniques sur les Affections Cutanées Parasitaires,* par le Docteur Bazin. p. 119. 1858.

"In the course of the year 1854 several members of a family, amongst whom was a young physician, remarked that several mice, caught in a trap, were affected with a peculiar disease. Upon the head and front legs there were crusts of a sombre yellow tint, of a regularly circular form, and more or less elevated above the level of the neighbouring healthy parts. A manifest depression was likewise detected in the centre of each crust, just as one observes in porrigo favosa; the parts where these had fallen off were ulcerated, and the skin appeared to be destroyed throughout its whole thickness. These mice were given to a cat, which exhibited sometime afterwards, above the eye, a crust similar to those on the mice. Later still, two young children of the family, who played with the cat, were successively affected with the same disease, yellow crusts making their appearance on several parts of the body, on the shoulder, face, and thigh. The physician who was summoned pronounced them to be cases of porrigo favosa."

Some of the fragments were sent to Bazin, who recognised the parasite with its characters well marked.

The following among many other cases, which came under my own observation, may be cited :—

A patient of my late colleague, who lived in lodgings in a newly built house in the West-end of Glasgow, showed him his dog, upon whose fore-paw a peculiar disease existed. Dr. Buchanan examined the patch, and found that it corresponded in every particular with a patch of favus—an opinion which was amply corroborated by a microscopic examination of a portion of the crusts. This dog was in the habit of killing mice, which abounded in the house, some of which were accordingly caught, and were examined by Dr. B. and myself. We had no hesitation in pronouncing the disease to be favus, and a microscopic examination showed distinctly the presence of the *Achorion Schönleinii.*

This disease in mice has a special tendency to attack the ears, and thence it spreads to the head and throat, and to other parts. It produces much greater destruction than in the human subject, as it not only destroys the hair, but tends to eat into the deeper structures, and by slow degrees leads to exhaustion and death. One of the mice above referred to was stuffed, and is preserved at the Hospital for Skin Diseases, Glasgow. The complaint in mice had at this time attracted the attention of non-professional persons in Glasgow, as was evidenced by a correspondence in the columns of the *Glasgow Herald*, the writers having all seen in their houses mice so affected, and having been much alarmed lest they might be the means of poisoning the food or water, or of transmitting the disease to members of their family. No instance, however, was cited in which this had occurred. A still more interesting case occurred shortly afterwards in my own practice. A poor woman came to the Hospital for Skin Diseases accompanied by one of her children. They were both affected with favus of the non-hairy parts of the body. On each there were scattered here and there characteristic little round patches of eruption, on some of which numerous minute favus cups were detected, exhibiting the *Achorion Schönleinii* microscopically. Two other children of this woman, as also their father, were similarly affected. Mice abounded in the house sometime previous to this, and a cat was accordingly procured, which killed all of them. I had therefore no opportunity of examining them, but the cat was brought to me, and on the tops of its fore-paws I detected numerous undoubted favus cups.

The next case, which is equally interesting, came under my notice a few days after the last. I was asked by Mr. Thomas Bryce, surgeon, to visit along with him a family which he was attending. A number of mice had been caught in the house three months previous to this date, which had been much handled by the children. Five weeks afterwards an eruption was noticed on one of the little girls, which spread to one of the sisters, her mother, the baby, and a little girl who worked in the establishment. On examining the eruption, which was confined to the non-hairy parts, it was found to correspond exactly with the appearances in the previous case. On some of the patches distinct favus cups were seen, which exhibited the achorion microscopically, and, on those which were devoid of them, the eruption corresponded to the variety already described under the head of "favus of the epidermis," and the scales were loaded with the spores and tubes of the parasite. There were no mice in the traps at the time, but shortly after my visit Dr. Bryce kindly sent me five, on the back of one of which near the tail a characteristic favus cup was seen, while the side and lateral aspect of the head and ears of another were eaten away by the disease. The crusts were examined with the microscope, and the achorion was detected in great abundance. Dr. Bryce informed me that the mice sent to me exhibited the same appearance as those with which the children had been playing.

Other cases of a similar nature have come under my notice from time to time, one of which was reported by Dr. C. Fred. Pollock in the *Glasgow Medical Journal* (March, 1880).

But favus is not limited to cats and mice, for we read that Müller observed it in a Cochin-China fowl and in several chickens which had contracted it from the fowl, that Gerlach observed its transmission from fowls to the human subject,* and that Köbner succeeded in producing favus in rabbits by inoculating them with the achorion taken from the human subject; and there can be little doubt that, as the question becomes more thoroughly ventilated, this disease will be found to be much more generally diffused amongst the lower animals than many suppose.

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* *Loc. cit.*, pp. 26, 27.

Now, in all these cases favus transmitted favus, and I have never read of, still less have I ever observed, any case in which either tinea tonsurans or tinea versicolor was the result.

Let us now glance for a moment at the occurrence of tinea tricophytina (Ringworm) amongst the lower animals, in order to see if it gives us any information upon the point at issue.

In a paper on "Parasitic Skin Diseases in the Ox," by Gerlach, Professor at the Royal Veterinary School of Berlin, the author gives an account of ringworm in oxen. Having remarked that oxen which were put into the same stable with affected ones contracted the same disease, he determined to perform some experiments with the view of ascertaining whether it really was communicable to other animals. By successive inoculations he succeeded in the production of ringworm in oxen, in calves, and in horses, while his experiments in the case of pigs and sheep yielded a negative result. He likewise inoculated his own arm and those of some of the pupils with some of the parasitic matter from oxen, and in each case there resulted well-marked *tinea circinata* (Ringworm of the body).

Bärensprung's experience coincides with that of Gerlach. He rubbed on his forearm some scales containing an abundance of the spores and mycelium of the tricophyton taken from a case of ringworm in one of the lower animals. No effect was produced for the first few days, but after a longer interval his attention was attracted to the part by the supervention of itching, when he discovered a well-marked patch of *tinea circinata* (Ringworm of the body).* It is unnecessary to multiply cases of this kind, so that I may conclude with a case extracted from the volume published by me *On the Parasitic Affections of the Skin*, and quoted from Bazin :—

"A dragoon came to the dispensary of the St. Louis Hospital, affected with herpes circinatus of the front of the right forearm ; the skin of one of the patches was denuded of hair. He stated that five or six of his comrades had contracted this affection, as well as himself, from grooming diseased horses. We went to the barracks, where, sure enough, we saw three horses which exhibited round patches, absolutely identical with those of herpes tonsurans (Ringworm of the head) on the withers, shoulders, back, and belly. The hairs in the centre of each patch were broken off close to the skin, and there was, as in herpes tonsurans, a whitish, squamous, and even crust-like production which was traversed by the hairs. The presence of spores was detected with the microscope. The dragoon, who conducted us to see the horses, showed us also his young daughter, eight or ten years of age, the side of whose nose exhibited a patch of herpes circinatus."

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* Quoted by Aitken, from *British and Foreign Medico-Chirurgical Review*, July, 1857, p. 263.

We see, then, that as in the previous cases favus invariably transmitted favus, so in this tinea tricophytina invariably gave rise to tinea tricophytina.

I believe I am correct in stating that tinea versicolor has not been observed in the lower animals.

The following is a summary of the proofs adduced in favour of the non-identity of the *Achorion Schönleinii*, the *Tricophyton*, and the *Microsporon furfur*, the parasites met with in tinea favosa, tinea tricophytina, and tinea versicolor respectively :—

1. In all cases of successful inoculation with the *Achorion, Tricophyton*, and *Microsporon furfur*, the same parasitic disease has been produced as that from which the parasite was taken.

2. Of the innumerable cases *occurring in the human subject* illustrative of the contagious nature of tinea favosa, tinea tricophytina, and tinea versicolor, which have been recorded, there is no authentic case in which one of these diseases gave rise to one of the others.

3. The difference in the appearance of tinea favosa, tinea tricophytina, and tinea versicolor, when fully developed, is so very striking as to lead to the belief that they are produced by separate parasites.

4. There is no authentic instance on record of the transition of one of these diseases into one of the others.

5. The differences in the microscopic appearances of the achorion, tricophyton, and microsporon furfur are sufficiently striking to enable the observer in many cases to form a correct diagnosis from the microscopic examination alone.

6. Of the numerous instances on record of the transmission of favus and tinea tricophytina *from the lower animals* by contagion or inoculation, favus has always given rise to favus, and tinea tricophytina to tinea tricophytina.

Before taking leave of this subject, it may be well to refer to the opinion of Dr. John Lowe and others, that not only are the parasites in question identical, but also that they are one and the same with the *Aspergillus glaucus*. In confirmation of this view Dr. Lowe states, amongst other observations, that he placed in a bottle exposed to a moderately cool atmosphere, a solution of brown sugar and some favus matter. In rather more than a month the aspergillus glaucus was detected in the solution, having been apparently developed from the favus matter. Dr. Lowe seems to have repeated the experiment several times with a like result. It must be remembered, however, that there are many sources of fallacy in experiments of this kind, and I am entirely at one with Dr. Lowe in the following remarks :—

"In an investigation of this nature, where the objects to be examined are so minute, a considerable degree of difficulty is naturally experienced in affording satisfactory proof of the accuracy of the remarks concerning their development. For instance, in watching the germination of any given fungus, it may often be difficult to prove that no other plant of the same tribe is present to complicate the result; and this in consequence of the myriads of spores of various species which are constantly floating about in the atmosphere ready to become located, and grow upon any suitable pabulum."*

Moreover, similar experiments were conducted by Rémak, who did not arrive at any definite conclusion; while Köbner subjected the point to a more practical and satisfactory test by inoculating himself, Strube, and others, repeatedly with the penicillium glaucum, using the same precautions as in the experiments previously alluded to, but without the slightest result. Now, if the penicillium glaucum were identical with the parasites of favus, ringworm, and tinea versicolor, one would naturally have expected that he would have been as successful with it as he was in his inoculations with the *Achorion Schönleinii*, the *Tricophyton*, and the *Microsporon furfur*. So that, while no one can withhold from Dr. Lowe the credit which is due to him for the interesting experiments which he has carried out, and for the scientific manner in which he has conducted them, I think it must be conceded that further proof is required before we can admit that the parasites productive of tinea favosa, tinea tricophytina, and tinea versicolor are identical with the *Aspergillus glaucus*.

II.—CUTANEOUS AFFECTIONS DUE TO THE PRESENCE OF ANIMAL PARASITES. (SKIN DISEASES CAUSED BY DERMATOZOA AND EPIZOA.)

These diseases have certain characters in common.

1. They are of course all dependent upon the presence of animal parasites, which flourish at the expense of those whom they attack.

2. They are all contagious, although none of them are infectious—*i.e.*, actual contact is necessary for the transmission of the parasites or their ova.

3. All persons are not equally liable to be affected, certain soils, as in the case of the vegetable parasites, being more suitable for the development of animal parasites than others; half-starved, debilitated,

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* *Transactions of the Botanical Society*, vol. v., part 3, p. 193.

and broken-down subjects being specially, though far from exclusively, amenable to their influence.

4. All of them are associated with much itching, especially at night, to relieve which the patients scratch themselves unmercifully, and an eruption results, which presents the following characters:—The marks of the nails are more or less distinctly visible on the skin in the form of white or red, or excoriated streaks, the excoriations being studded with droplets of coagulated blood; in addition to these, papules are developed, the summits of which are torn by the nails, and little drops of serum or blood exude, which coagulate upon them. The long-continued congestion of the skin, also, induced by the scratching, leads to an increased deposit of pigment in the mucous layer of the epidermis, and the skin therefore assumes a dusky or brownish tint. The picture which the skin thus presents, resembles somewhat closely that observed in the genuine prurigo of Hebra—indeed, in it the appearances are also in a measure due to the scratching—and hence I am in the habit of calling such an eruption a "pruriginoid eruption." By a "pruriginoid eruption," then, I mean one produced by the nails of the patient in scratching, no matter what the source of the itching may be.

5. One attack of an animal-parasitic skin disease affords no security against another on a fresh exposure to contagion; hence the necessity for not only treating the patient who presents himself, but also any of his friends who are in the habit of coming in contact with him, and who are similarly affected. Neglect of this precaution often leads to great disappointment, both on the part of patient and doctor, and a disease, which might otherwise be cured in a few days, may continue to pester a household and to render its inmates miserable for an indefinite period of time, illustrations of which I have frequently met with.

6. They are all curable by the use of external applications which kill the parasites, such as ointments of sulphur, balsam of Peru, and styrax, although general remedies in addition are not to be overlooked, if any special deterioration of the health is manifest.

1. SCABIES.

Syn.—*The Itch.*

Parasite, Acarus scabiei.

This is a very common disease in Scotland, as shown by the fact that it occurred 72 times among 2,000 of my private, and 5,810 times among 38,054 of my hospital cases. It is a highly contagious disease, especially if there is any deterioration of the general health, or inattention to cleanliness. It is pretty sure to be communicated by sleeping with, or in the beds of, those who are affected, or by coming much in contact with them in any way; hence we often find it communicated from the hands of nurses to the hips of infants. It may also be transmitted from the lower, particularly domestic, animals, such as cats—a circumstance which must be kept in view, else all our efforts to exterminate the disease may prove unavailing. It is oftener met with in winter than in summer, because the lower classes then herd more together to keep themselves warm; and males are much more frequently attacked than females, because they more frequently occupy strange beds, and are thus more frequently exposed to contagion.

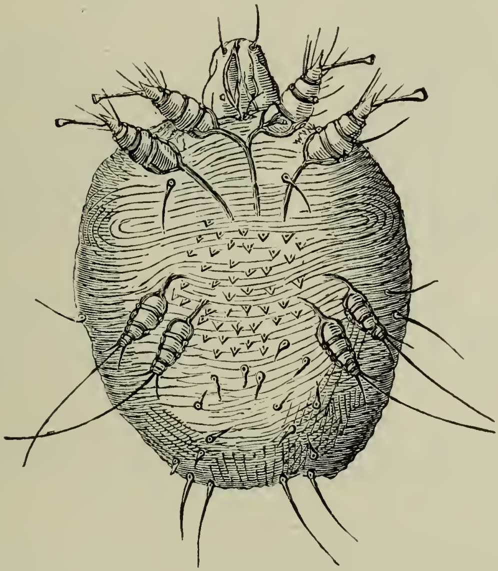

Fig. 63.

Female Acarus.

The following are the *characters of the parasite*:—

The *female* acarus (see Fig. 63) is from one-seventh to one-fourth of a line in length, and from one-tenth to one-sixth in breadth; it is almost egg-shaped, and broader anteriorly than posteriorly. Its head projects considerably beyond the body, its edge being rounded, and with a central fissure corresponding to the mouth, which is provided with mandibles, on each side of which are several hairs. The body is marked by numerous nearly parallel wavy lines, and the dorsal surface which is convex, is provided with numerous little angular spines, as well as little round tubercles, from each of which springs a small conical spine; two hairs project from each side of the body, and four posteriorly. It has eight legs, four of them being situated posteriorly, and four anteriorly, there being two on each side of, and close to, the head. Each is composed of several jointed segments, which are conical in shape and taper towards the point. From the extremity of each posterior leg projects a long curved hair, while the four anterior ones are provided with stalked suckers, and with several small hairs springing from close to the root of each sucker. If impregnated, the ovary is distinctly visible with finely granular contents, the ovum.

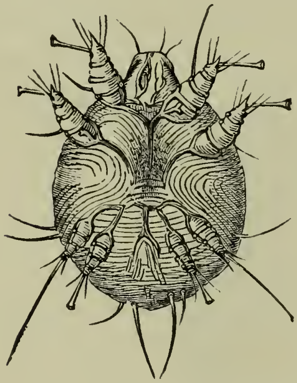

Fig. 64.

Male Acarus.

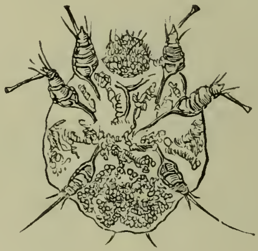

Fig. 65.

Larva.

The *male* acarus (see Fig. 64) is considerably smaller; the wavy lines on its body and the dorsal spines are less numerous; the inner pair of posterior legs are provided, like the anterior ones, with suckers, which are made use of in the act of copulation, and the parts corresponding to the genital organs between them are very distinctly marked.

The *larva* (see Fig. 65), or young acarus, is smaller than the male, and has only two hind legs, instead of four, which are provided with hairs, and there are comparatively few bristles. Sometimes the full-grown insect with eight legs may be seen within its old six-legged skin. The adult acarus is only developed after three moultings.

The *eggs* (see Fig. 66) vary much in size according to their age, and the length to which the progress of development has gone: on an average they are about one-twenty-fifth of a line broad and one-eleventh long. In the earliest stage the egg is filled with granular matter, and as it increases in size its contents seem to shrink, to recede from the shell, and to have a distinct enveloping membrane: they have a bright yellow colour and granular appearance, contrasting strongly with the clear, smooth, almost colourless walls of the egg-shell without. Soon after this the head and legs of the acarus become distinct, and at last the whole parasite within the shell. Finally it makes its escape, and the shrivelled-up shell remains, usually marked by two longitudinal slits made by the parasite in gaining its freedom.

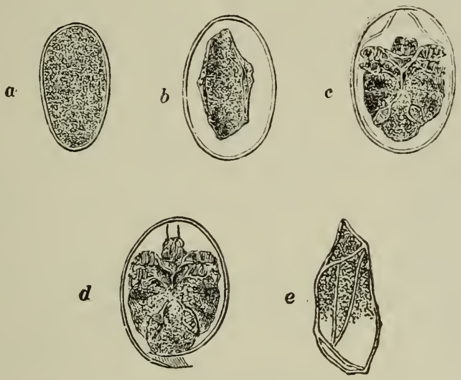

Fig. 66.

a, Egg in the first stage; *b*, in the second stage (the granular contents in *a* and *b* are yellow in the original); *c*, ditto in third stage, insect becomes apparent; *d*, ditto in fourth stage, insect has broken the shell; *e*, egg-shell after escape of acarus.

The following are the *habits of the female Acarus*:—When placed upon the skin, it seeks a suitable spot, having a preference for tender parts, often selecting the orifice of a hair follicle, and then, its head directed at right angles to the surface, and supporting itself by means of the bristles which project from its posterior extremity, in less than half an hour it penetrates into the deeper layers of the epidermis, where it lies imbedded, and caters for its support. If impregnated, as is usually the case, an egg is soon laid, to make room for which it burrows a little farther. A new egg is laid on an average each day, oftener at first, seldomer as it gets exhausted, and each time it penetrates farther, leaving its deposited eggs to occupy the space formerly inhabited by itself. The length of time elapsing between the laying and hatching of an egg varies, according to different observers, from five days as a minimum, to fourteen as a maximum, and at all events it is rare to find more than fourteen eggs in one canal, though there may be many egg-shells. On cutting out one of the canals (*cuniculi*) (see Fig. 67), and examining it with the microscope, the female insect is found at the further extremity, and behind it its eggs in various stages of development, those nearest the acarus being in the most primitive condition. These are surrounded by little irregular blackish spots, which are supposed to be its excrement. The canals are usually from half a line to three lines long, but they are often much longer than this, and in any case they have a tendency to take a more or less serpentine and irregular course: they are not unfrequently seated on an inflamed elevation, or on the upper wall of a vesicle or pustule, the inflammatory action resulting from the irritation of the parasite, and being most marked near the point where it lies imbedded. On examination of the cuniculus with the eye or with a hand-glass it is seen to have a dotted appearance, a feature which has been variously interpreted. Hebra held that it is due to the presence of particles of dirt; Hardy and Bazin that it is dependent on the fæces of the acarus shining through the epidermis; while Gudden, Bourguignon, and others are of opinion that the dots are little orifices, which are supposed to act the part of air-holes. This view is probably incorrect, for it has been proved that the acarus can exist for a couple of days immersed in oil, and therefore does not require a constant supply of air. Another opinion is that it is through these the young acari escape. The following is, however, a more likely mode of exit:—The direction of each cuniculus is oblique, the portion first formed being nearest the surface; hence, as the old epidermis exfoliates, the first laid eggs gradually approach and finally reach the surface, while the recently deposited ova, owing to the oblique direction of the canal, still remain covered by the epidermis. In this way the eggs reach the surface just about the time when the young ones leave the shell.

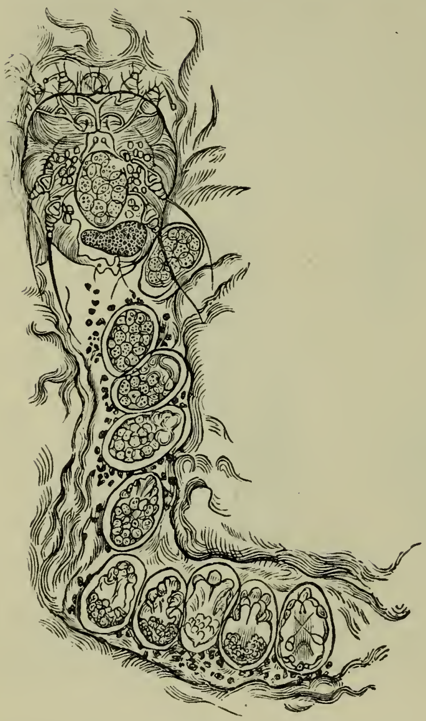
Fig. 67.
After Neumann.

At the extremity of the cuniculus a minute whitish elevation is often seen, especially after washing the skin if it is dirty, which is the parasite covered by a layer of epidermis : it can be readily removed by gently raising the epidermic covering with a penknife, and inserting the blunt point in the direction of the acarus, which, if not injured, usually grasps it, and it is thus removed. We can generally tell, even without the aid of the microscope, whether it is the insect or merely a piece of epidermis which is adhering to the knife, for the former has a rounded outline, and a pearly translucent appearance, readily appreciable to the naked eye.

After the female has entered its canal it is unable to recede, owing to the little dorsal spines which project backwards, and it dies after it has finished laying its eggs, the probable duration of life being from three to four months.

The *unimpregnated female* generally crawls upon the surface of the epidermis ; while the *larva*, like the impregnated female, burrows into the skin, but more deeply, and therefore produces more irritation, so that a vesicle frequently results.

The *full-grown male* generally goes about free on the surface of the epidermis, though some say that it occupies a small hole in the cuticle, somewhat like the larva, without, however, producing so much irritation.

While the itch insect and its furrows may be found on any part it has certain seats of predilection—viz., where the skin is not only warm, but also delicate and easily penetrable. It should be specially searched for on the fingers, especially on their inner surfaces, and on the folds of skin passing from one finger to another, on the fronts of the wrists, on the penis in the male, and the nipple in the female. It has a special liking, too, for parts which are pressed on or tightly embraced by the clothing ; hence it is very commonly found at the seat of garters, trusses, &c., and upon the buttocks of cobblers and tailors, who sit on hard stools, or the like. The feet and umbilicus are likewise usually implicated, while the face and head almost invariably escape.

That warmth is relished by the acarus is proved by the facts that it remains quite motionless when it is placed upon a perfectly cold glass slide, but immediately begins to move if it is warmed, and that the irritation of the skin is most troublesome when the patient becomes warm in bed.

Itching is a very constant symptom, variable, however, in degree in different persons, and is not confined to the parts where the acari reside, but is pretty generally diffused over the body. To relieve this the patient scratches the skin, and produces an artificial eruption, previously described as a pruriginoid eruption (see p. 612). This eruption is most abundant, as a rule, on the forearms, lower portion of the abdomen, and inner aspect of the thighs; while the upper arms, upper half of the trunk, and legs are comparatively free; and in some cases this *localisation of the pruriginoid eruption* is so striking as to leave little doubt of the diagnosis. In severe cases, especially in children, large pustules appear, particularly on the hands, feet, and hips; on the last situation, according to Hardy, owing to infection conveyed by the hands of nurses affected with the disease while carrying them. When the pustular eruption is a prominent feature, the disease is sometimes spoken of as scabies purulenta; and, when typically present in the situations mentioned, it is almost pathognomonic.

In those who have a constitutional tendency to eczema, eczematous eruptions sometimes make their appearance, which may assume any of the varied forms of that complaint, and which present the same appearances as when occurring from other causes (see description of Eczema). When the eczematous complication is very marked, and is associated with much crusting, the condition corresponds to the variety described as scabies Norvegica—seu crustosa—seu pecorina, and by the Germans as borkenkrätze (see Fig. 68).

The *diagnosis* is in general easy. The pruriginoid eruption induced by the scratching is usually most marked on the forearms, lower portion of the abdomen, and inner aspect of the thighs; and when this localisation is typically marked it is of itself almost pathognomonic. Large pustules, when present, are most common on the hands, feet, and hips, and are especially frequent in young children, and in persons with delicate skins. Eruptions on the nipple in the female, and on the penis in the male, are very characteristic as confirmatory of scabies, while we should search for vesicles and furrows, especially between the fingers and about the wrists, and in all doubtful cases should endeavour to find the itch insect in the manner already indicated. Generally, too, there is a history pointing to contagion as the source of the complaint, such as having recently slept in a strange bed, or with some one who had an itchy eruption, and usually other members of the household are found to be similarly affected, particularly those sleeping in the same bed with the patient.

If eczema occurs as a complication of scabies, and the patient, as commonly happens, only exhibits the eczematous patches, the primary disorder is apt to be overlooked; hence the importance, in all such cases, of examining the whole cutaneous envelope, when the typical picture of the scabies eruption is often displayed; and usually there is a history of contagion, which is of itself suspicious, as eczema is not communicable. If we are still in doubt, an examination of the eczematous crusts, as suggested by the late Dr. Hilton Fagge, may clear up the diagnosis. A piece of crust—as much as will lie upon a shilling—is boiled in a solution of caustic soda (half a drachm of the solid hydrate to one ounce of water) until it is in great part dissolved. The fluid is then allowed to settle, when the supernatant fluid is poured off, and the flocculent deposit examined with the microscope: numerous young acari, and probably also full-grown males, eggs, egg-shells, and the *débris* of these, may often be detected, as shown in the woodcut.

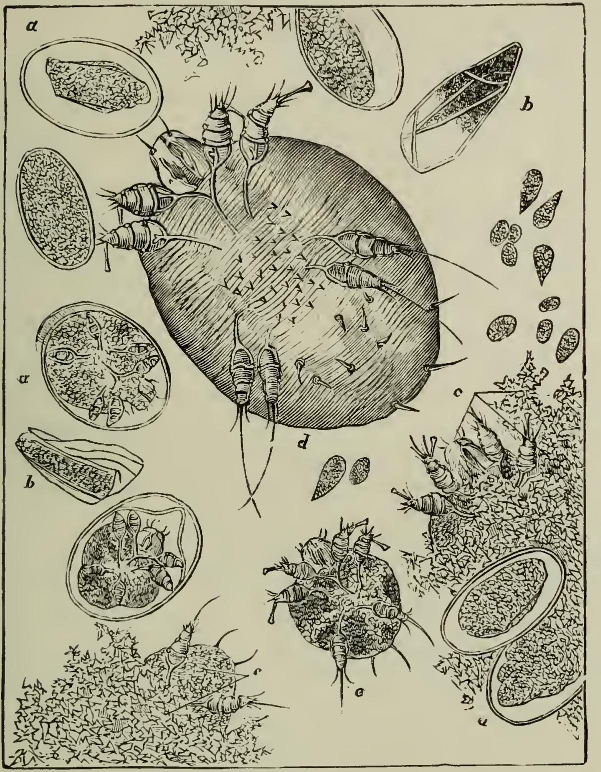

Fig. 68.

a, *a*, *a*, Eggs of Acarus in various stages of development; *b*, *b*, Egg-shells; *c*, *c*, Fragments or Acari; *d*, Female Acarus; *e*, Larva. The little oval or irregularly shaped masses are supposed to be excrement.

The genuine *Prurigo* of Hebra may be mistaken for scabies, on account of the eruptions produced by the scratching, but the former commences in childhood, and is apt to last on and off for years, or even for life; it is not contagious; the skin is more or less thickly studded with papules, which are nearly of the colour of the healthy skin; and the eruptive elements are most abundant upon the legs, and more scanty upon the thighs; the back shows nearly as much evidence of disease as the front of the body, the chest is more affected than the abdomen, and the skin covering the flexures of the joints is rarely involved.

The diagnosis of scabies from *Phtheiriasis corporis* will be considered in connection with the description of the latter disease.

Treatment.—Nothing can be easier than the cure of scabies, the treatment of which should be exclusively local in uncomplicated cases; but in carrying it out the following indications must be kept in view:—

1st. To destroy the acari and their eggs;

2nd. To do so without irritating the skin;

3rd. To remove the eruptions called forth by the scratching, &c.

There is a very great tendency to concentrate attention too exclusively upon the first indication.

In a few cases, in which the inflammation called forth by scratching is very acute, especially when numbers of large pustules have been produced, it may be advisable to allay it in a measure before applying the parasiticide, for, even if the latter is not irritating in itself, it may increase the inflammatory action in consequence of the firmness with which it requires to be rubbed in. This may be effected by the application of cold potato-starch poultices, or, if the inflammation is very diffuse, by the use of warm baths containing a couple of handfuls of potato-starch or wheat-bran, and enough of washing soda to render the water soft and pleasant. In the vast majority of cases, however, such preparatory treatment is quite unnecessary.

Some recommend that applications should only be made where any eruption is manifest, but I confess that I am very much opposed to such partial applications, because they fail to *insure* the desired result: and it is pretty certain that, taking all cases so treated into account, they cause more inconvenience and trouble in the long run than when the application is made to the whole body (the head alone excepted). Before applying the remedy it is generally useful to make the patient scrub his body with soap and water, and then to sit in a hot bath for some time; the object being to soften the epidermis, and thus to facilitate the action of the parasiticide by bringing it into closer contact with its victims.

It is advisable, too, to disinfect the clothing if we wish to be *certain* of a cure. This may be done by exposing it to the fumes of sulphur, which, however, are apt to discolour it, and to give it a disagreeable odour; or to hot air (at a temperature of 150° Fahr.) for some time; or by steeping the washing clothes in boiling water, and passing a hot iron over the others. Another way of preventing reinfection is to prescribe a second course of the parasiticide ten days after the first, so as to kill any acari which have been left on the clothing; or if the clothing is laid aside for a fortnight any acari which were on it will have died. In the Vienna hospital no attempt is made to disinfect the clothing, and yet a relapse only occurs once in a hundred cases.

At the Glasgow Hospital for Skin Diseases each patient affected with scabies is told that not only he, but all others sleeping with him, are to be treated simultaneously; and he gets a printed card containing the following directions:—

1st. Scrub the *whole* of your body (except the head) as firmly as possible, without hurting yourself, with black soap and water.

2nd. Sit in a hot bath for 20 minutes, or, if you cannot get a bath, wash yourself with hot water thoroughly.

3rd. Rub some of the ointment firmly into the skin of the whole body (except the head) for 20 minutes. Let the ointment remain on the body all night.

Repeat these processes every night for three nights, *but not oftener.*

Besides the above, put all your washing clothes into boiling water, and iron all your other clothes *thoroughly* with a hot iron.

Having pointed out the mode of carrying out the treatment, it remains for me to glance at a few of the parasiticides which are most serviceable, or most in vogue in the treatment of scabies, merely premising that, in the case of women and children, or others with delicate skins, care must be taken to avoid the use of the more stimulating of these.

There is no remedy more generally used, nor more effectual, as far as the first indication of treatment above mentioned—the destruction of the acari—is concerned, than sulphur. Some recommend the use of sulphur vapour baths; others make the patient lie for two or three days in bed between blankets which have been freely dusted with sulphur; while Hardy recommends the use of a modification of the sulpho-alkaline pomade of Helmerich, the formula for which is subjoined:—

℞ Potassæ carbonatis, . .	ʒi.	
Sulphuris præcipitati, . .	ʒij.	
Adipis præparati, . . .	ʒxij.	—*M.*

The carbonate of potash is a solvent to the epidermis, and thus enables the sulphur to come more closely into contact with the acari. For my own part, if sulphur is to be used at all, I prefer combining it with one of the tarry preparations, as in the appended formula,* for the secondary

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* ℞ Olei cadini, ...	ʒiv.	
Sulphuris præcipitati, ...	ʒiv.	
Glycerini amyli, ...	ʒvi.	
Adipis benzoati, ...	℥iss.	—*M.*

Sufficient for three rubbings in the case of an adult.

eruptions produced by the scratching, and the irritation of the skin which the sulphur is apt to induce, are thereby allayed. A favourite remedy of Hebra, and one which I have used with advantage, is the subjoined modification of Wilkinson's ointment.* In this preparation the potash in the soft soap acts as a solvent to the epidermis, while the chalk removes it mechanically; the tar counteracts the secondary eruptions, and the sulphur destroys the acari. It should be applied night and morning for two days. The Belgian army is treated by means of Vleminckz' solution,† but it is a powerful irritant, and should on no account be applied to a delicate or sensitive skin.

I have alluded to sulphur before any of the other parasiticides, because it is the favourite remedy of the profession and with the public, but I confess I have little partiality for it; for, while no remedy is more destructive to the acari, it unfortunately happens that it not only irritates and destroys them, but is also apt to irritate and inflame the skin.

I much prefer an ointment of Styrax, the prescription for which is appended,‡ for it not only kills the acari, but also has a pleasant aroma, and rather soothes than irritates the skin. Burchard strongly recommends—and where expense is no object I can fully endorse his recommendation—the use of balsam of Peru. The patient should not be perspiring at the time of the application, nor should he have a bath before it, as the drier the skin the better can it be rubbed in. One thorough application is sufficient, or the balsam may be diluted with two parts of lard and applied oftener; or it may be combined with styrax (liquid styrax and bals. peru of each 40·0, alcohol and olive oil of each 10·0). The favourite remedy of the late Sir Robert Christison was chlorated lime (liq. calcis chloratæ ℥ij, water ℥vi), but probably a

---

* ℞ Sulphuris præcipitati,		
Picis liquidæ, āā, ...	℥vi.	
Saponis viridis,		
Adipis, āā, ...	℔i.	
Cretæ, ...	℥iv.	—*M.*

† ℞ Calcis, ...	℥ss.
Sulphuris præcipitati, ...	ʒi.
Aquæ destillatæ, ...	℥viij.

Boil and stir constantly till a homogeneous mixture is produced, then pass through a sieve. More than enough for one patient.

‡ ℞ Styracis liquidi, ...	ʒi.
Adipis, ...	℥ij.

Melt and strain.

Or Schultze's modification of Pastau's prescription, which is the following —

℞ Styracis liquidi, ...	ʒi.
Sp. rectificati, ...	ʒij.
Olei olivæ, ...	ʒi.

Enough for one patient. M. fiat linimentum.

better preparation is chlorinated oil. This is obtained by passing a stream of dry chlorine gas through a tube reaching nearly to the bottom of a bottle of olive oil until the gas ceases to be absorbed. Kaposi is specially in favour of an ointment containing naphthol,[*] while Dr. Albert Crane is loud in his praises of chrisma.

A great many other remedies have been used, such as an ointment of staphisagria,[†] or white hellebore,[‡] carbolic acid, or petroleum,[§] but it is unnecessary further to extend the list. In the treatment of scabies ointments are generally to be preferred to lotions, because the parasiticides are thus kept in prolonged contact with the acari, and because it has been proved that lard and oil are themselves parasiticides, and may alone effect a cure if kept applied continuously for a couple of weeks. But I can heartily recommend the treatment of Dr. Comesati, which consists of sponging the body at night with ʒiv of hyposulphite of soda dissolved in Oi of water, and in the morning with ℥i of dilute hydrochloric acid mixed with Oi of water. Sulphur, sulphurous acid, and chloride of sodium are formed, and, in most cases, the disease is cured by a single application, but it is safer to continue the treatment for three days.[‖] I do not think it necessary to discuss the experiments which have been made on the length of time which various preparations take to kill the acari after their removal from the body, because it is one thing to kill them when brought into immediate contact with the medicine, and another to destroy them when they lie imbedded in the epidermis.

In the treatment of scabies Norvegica, the crusts are first removed by means of repeated baths, opiates being given to procure sleep. One of the parasiticides above recommended, combined with pix liquida or oleum rusci to counteract the eczematous manifestations, should then be used. It is not necessary, however, to enter into minutiæ with

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[*]

Naphthol,	15 parts.
Soft soap,	50 ,,
Lard,	100 ,,

[†]

℞ Pulveris Staphisagriæ,	℥i.	
Adipis,	℥iij.	—*M.*

Digest for three hours and strain (Swediaur).

[‡]

℞ Hellebori albi pulveris,	℥i.
Adipis præparati,	℥iv.
Olei limonum,.	♏xx.

Misce, ut fiat unguentum (Wilson).

[§]

℞ Petrolei,		
Sp. rectificati, āā,	℥i.	
Balsami Peruviani,	ʒi.	
Olei rosmarini,		
Olei lavandulæ, āā,	♏xv.	—*M.* (Hebra.)

[‖] *Pharmak Zeit. et Journ. de Med. de Paris*, 1885, No. 14.

regard to this variety, for it is merely an exaggerated form of neglected scabies, which is decidedly rare, and each case must be treated on its own merits. After the acari have been destroyed a certain amount of eruption and irritation are left, but it generally subsides gradually if the skin is left alone. If, however, it persists it must be treated by soothing applications such as are useful in eczema.

2. PHTHEIRIASIS.

Syn.—*Morbus pedicularis*—*Pediculosis.*

Parasites, Pediculi—Lice.

This affection is much more frequently met with among the lower classes, for, while only 9 cases occurred among 2,000 of my private cases, there were 972 among 38,054 hospital cases.

There are three varieties of this affection, each dependent upon a separate parasite, viz. :—

(*a.*) Phtheiriasis corporis—*Parasite,* Pediculus corporis.
(*b.*) Phtheiriasis capitis—*Parasite,* Pediculus capitis.
(*c.*) Phtheiriasis pubis—*Parasite,* Pediculus pubis.

(*a.*) Phtheiriasis corporis (*Prurigo pedicularis*).

Parasite, Pediculus corporis (Pediculus vestimentorum), which is met with exclusively upon non-hairy parts.

The following are the **characters** of the parasite (see Fig. 69) :—It is from one to two lines long and about half as broad. The head, which is irregularly oval, is jointed to the body, and provided with antennæ, one on each side, each having five joints, and covered with minute hairs, which are also seen at the edges of the head. The body is elongated; the abdominal portion is very broad, its margins lobulated and covered with fine hairs. From the thoracic portion, which is comparatively narrow, there proceed six legs, three on each side; the legs are hairy, and provided with four joints which terminate in claws.

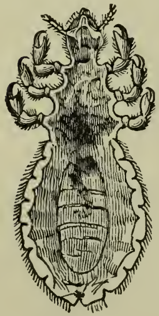
Fig. 69.
Pediculus corporis (female).

It secretes itself among the folds of the clothing, and only sallies forth to obtain the means of subsistence at the expense of the skin of the wearer, so that, when a person so affected is naked, lice are rarely seen upon his body, though numbers may be visible in the folds of the clothes which lie next the skin, especially those parts of them which embrace the neck, waist, and wrists. Here also their nits (eggs) are discovered, which have the appearance of little crystalline, shining, or yellow and opaque bodies. If, however, as often happens, the patient puts on clean underclothing before coming for advice, neither lice nor nits may be found, and thus mistakes are apt to occur, especially as patients often indignantly deny the impeachment of harbouring such loathsome creatures.

But, while the insects themselves are not usually discovered upon the skin, their bites can be readily detected, consisting of minute black dots, each of which is surrounded by an areola of inflammation, which is the seat of a serous infiltration, and thus resembles a spot of nettle-rash. On pressure the areola momentarily disappears, but the colour of the bite remains.

The attacks of the parasite cause itching, while their crawling over the surface leads probably to the creeping sensations so graphically described by some of the martyrs to these little intruders. To relieve the discomfort the patient scratches the skin, and this leads sooner or later to the development of a pruriginoid eruption such as has been previously described (see p. 612). The excoriations thus produced are, as a rule, much larger than those due to scratching from other causes, such as scabies, because the inflammatory areola in connection with each bite is infiltrated with serum, and thus offers very little resistance to the nails of the patient. The pruriginoid eruption, too, is generally met with in greatest abundance on the neck, back, and shoulders, and on those parts which are tightly embraced by the clothing, such as the waist and wrists, where the pediculi are most numerous, but any part of the body may give evidence of scratching. The scratching may also induce the development of papules, pustules, boils, eczematous eruptions, and even glandular enlargements. This affection is generally, though not exclusively, met with among old people, especially in debilitated or broken-down subjects, or in those whose diet is deficient, and who are uncleanly in their habits.

In reference to diagnosis the late Dr. Tilbury Fox wrote as follows:—"The lesion which is characteristic is not a bite or a scratch, it is the opening of a follicle dilated by the proboscis of the pediculus, and showing in its centre a speck of at first bright-red blood, which soon acquires a darker hue.

"This hæmorrhagic speck or 'lesion' is not raised to the feel or the eye. It looks like a circular, cup-shaped depression about the size of the blunt point of an ordinary pin, with a well-marked circumferential edge (a dilated follicle), and a black dot in the centre. It may be confounded with scratched hyperæmic follicles, or papillæ, or minute excoriations. The latter are raised, and, on being examined with a magnifying glass, are seen not to be round, but to have ragged edges, and to present a bleeding surface; the excoriations are irregular in shape, and want the look of the dilated follicle-mouth, with the speck of blood in the centre.

"The fact is the pediculus has no mouth; it does not bite. It has a proboscis which it pushes into a follicle to reach a capillary vessel. In the act of sucking blood away, the mouth of the follicle is dilated, and when the proboscis is withdrawn, the blood wells up to fill the dilated orifice."

The following tables in reference to diagnosis may be studied with advantage:—

Pruritus senilis.	**Phtheiriasis corporis.**
1. Necessarily occurs in old people.	1. Generally, though not necessarily, in them.
2. Not contagious.	2. Contagious.
3. The eruptions induced by the scratching have no special seats of predilection.	3. Such eruptions usually most abundant about the neck and shoulders, and where the clothing embraces the body tightly.
4. The above "hæmorrhagic speck" absent.	4. The "hæmorrhagic speck" present.
5. No lice or nits to be discovered on the clothing.	5. Pediculi and nits detected in the folds of the clothing.
6. Difficult of cure, and not removed by the use of parasiticides.	6. Easily removed by the use of a parasiticide such as staphisagria ointment.

Scabies.	**Phtheiriasis corporis.**
1. May attack any one, but the older the patient, the less the liability to infection.	1. Generally attacks old people, especially if badly fed and in broken-down health.
2. Very contagious, and those sleeping with the patient are pretty sure to be attacked.	2. Less contagious; those sleeping with the patient not necessarily affected.
3. Furrows of the acarus, vesicles, &c., detected, especially between the fingers, on the wrists, on the penis of the male, and the nipple of the female; and acari and their eggs detected in the cuniculi, or sometimes in the crusts.	3. Lice and their nits discovered, *not generally upon the body*, but between the folds of the clothing.

4. The pruriginoid eruption is most abundant upon the forearms, lower part of abdomen, and inner aspect of thighs, in typical cases.	4. The pruriginoid eruption generally most abundant about the neck and shoulders, and where the clothing closely embraces the body.
5. The above "hæmorrhagic speck" absent.	5. The "hæmorrhagic speck" present.
6. In children particularly, large pustules commonly seen, especially on the hands, feet, and hips.	6. Pustules only exceptionally present, and have no special seat of predilection.

Urticaria (Nettlerash).	Phtheiriasis corporis.
1. Not contagious.	1. May spread by contagion.
2. Eruption resembles that produced by the sting of a nettle, is very evanescent, but may recur indefinitely.	2. Nettlerash-like spots often detected, but in the centre of each the bite of the insect is seen.
3. No lice or nits to be found on the clothing.	3. Lice and nits found between the folds of the clothing.
4. The pruriginoid eruption has no special seat of predilection.	4. Usually specially abundant about the neck and shoulders, and where the clothing embraces the body tightly.
5. Oftenest met with in young persons and children, and no special connection with debility or broken-down health.	5. Generally met with in old people, whose health is below par.

Prurigo (Hebra).	Phtheirasis corporis.
1. Not contagious.	1. Moderately contagious.
2. Commences usually in early life, and lasts for years or even on and off for a lifetime.	2. Most common in persons advanced in life, and readily yields to treatment.
3. Eruption most abundant on the legs, the thighs being less affected; the chest is more involved than the abdomen, and the back nearly as much as the front of the body, while the flexures of the joints usually escape.	3. Eruption most abundant about the neck and shoulders, and where the body is tightly embraced by the clothing.
4. The above "hæmorrhagic speck" absent.	4. The "hæmorrhagic speck" present.

5. Skin more or less thickly studded with papules, which are of a pale colour.	5. Nettlerash-like spots usually present here and there, the bite of the parasite being seen in the centre of each.
6. No parasite to be discovered.	6. Lice and their nits discovered in the folds of the clothing.

(*b.*) Phtheiriasis capitis.

Parasite, Pediculus capitis (met with exclusively upon the head).

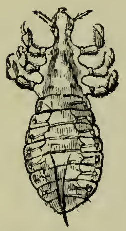

Fig. 70.
Pediculus capitis.

Characters of the Parasite.—The Pediculus capitis (see Fig. 70) closely resembles the Pediculus corporis, but it is considerably smaller; its head is triangular; its legs are larger in proportion to the size of the body, and the abdomen is more distinctly divided into seven segments, which are separated from one another at the margins by deep notches. The ova (or nits) are attached to the hair; they have a pyriform shape, the end nearest the root being pointed, while the opposite extremity is truncated and furnished "with a flat round operculum" (see Fig. 71). They are attached to the hair by means of aglutinous material, which, according to Dr. Maddox, is secreted by the base of the claw of the pediculus.

The pediculi crawl upon the scalp and amongst the hairs, and this, combined with their attacks upon the skin, produces irritation and itching, to relieve which the head is scratched. The scalp is thus apt to be torn and excoriated, and the serum which exudes may

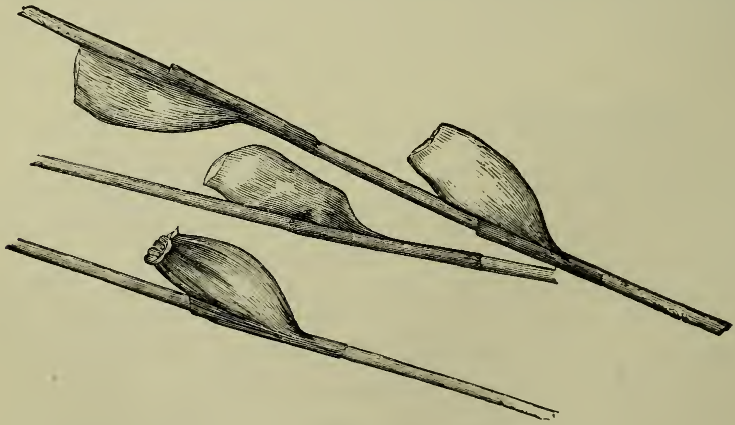

Fig. 71.
Hairs with nits of Pediculus capitis attached, one containing a larva. (25 Diam.)

be sufficient to glue the hairs together, and to form crusts. The disease is frequently complicated with eczema, especially in those who are predisposed thereto, so that the head often has a very loathsome appearance, and may emit an offensive odour. This eczematous eruption has a special tendency to appear on the back of the head, a localisation which is almost pathognomonic; but it does not always remain limited to the head, being very apt to spread to the back of the neck, to the ears, or even to the face, and to be accompanied by enlargement of the neighbouring glands. In such cases we should always satisfy ourselves as to the presence or absence of pediculi, else we may mistake a case of phthieriasis capitis for one of eczema. But, while pediculi often lead to eczema, the reverse may be the sequence of events, the eczema being followed by the presence of pediculi, which are attracted by the morbid secretions, such a soil being specially suited to them. In the milder cases there is little or no eruption, but the most typical illustrations are met with in females whose growth of hair is luxuriant, and amongst the ill-fed, ill-cared-for children of the poor, although adults are not exempt.

Diagnosis.—The only disease likely to be mistaken for Phtheiriasis capitis is eczema (impetiginodes) capitis, the distinctive features of which are supplied in the accompanying table :—

Eczema (impetiginodes) capitis.	**Phtheiriasis capitis.**
1. Not contagious.	1. Contagious.
2. Though oftenest in children, occurs at all ages and amongst all classes.	2. Generally met with in the children of the poor, or in females with luxuriant hair.
3. No pediculi or nits detected, or only as a complication, and subsequent to the development of the eruption.	3. Pediculi and their nits, adherent to the hair, discovered, the latter more readily than the former.
4. Eczematous eruptions often found on other parts of the body, as at the flexures of the elbows and knees.	4. If complicated with eczema the eruption does not generally involve distant parts, though it may spread to the nape, ears, &c.
5. Aggravated by the use of parasiticides, which irritate the scalp.	5. Readily cured by the removal of the nits and the use of a parasiticide, such as staphisagria ointment.

(*c.*) Phtheiriasis pubis.

Parasite, Pediculus pubis—Phthirius pubis—Morpion.

This parasite is met with on *all* hairy parts except the head, but the hair on the pubis and neighbouring parts is its favourite huntingground. It is indeed a very curious circumstance that these three varieties of lice should live in such close proximity, and yet in no case leave their own preserves for the purpose of poaching on those of their neighbours. We can understand how one parasite should prefer hairy, and another non-hairy parts, but it is difficult to see how one pediculus should find its appropriate soil on the head alone, while another attacks all hairy parts except the head. Mr. Quekett's explanation is that the crab-louse, owing to the peculiar shape of its claws, is unable to climb up straight hairs to deposit its eggs, and accordingly selects parts where the hair is curly; but, if so, why should we not encounter it on the heads of curly-headed persons?

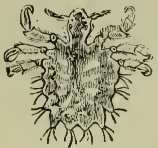

Fig. 72.

Pediculus pubis.

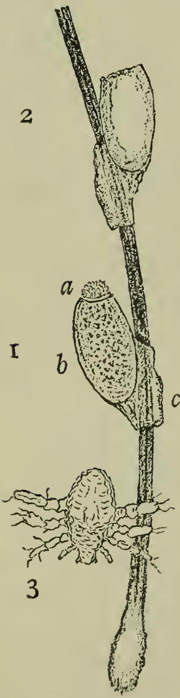

Fig. 73.

Young pediculus pubis and nits adhering to a hair, from a case of phtheiriasis palpebrarum (Dr. C. Fred. Pollok). × 30 diam.

Characters of the Parasite.—The Pediculus pubis (see Fig. 72) resembles the head-louse in many respects, but its body is much broader and shield-shaped, and there is no distinct separation between the thorax and abdomen. It is studded with small spines, and, besides possessing six feet which resemble those of the other pediculi, it is furnished with eight rudimentary-looking ones, which terminated in bundles of hairs. It does not run about like the head-louse, but grasps the hairs where they emerge from the skin with its fore-legs, so that it is very apt to be overlooked, and some difficulty is experienced in extricating it. The nits resemble those of the head-louse, and are attached to the hair in the same way as them, but always close to the exit of the hair from the skin (see Fig. 73).

The itching leads to scratching, and often small papules are developed, which are red and excoriated; and occasionally an eczematous eruption is induced, the cause of which may be suspected from its situation. An examination will then lead to the discovery of the pediculi lying in close contact with the skin, and of their nits, as well as of reddish particles of fæcal matter in the immediate vicinity of the parasites. In those more particularly who have delicate skins spots of a dull leaden or blue colour, of a roundish shape, from a quarter to half an inch in diameter, and not elevated (taches bleuâtres—maculæ caeruleæ) are sometimes observed on the trunk and limbs, as first pointed out by Falot and Mourson, in 1868; and their connection with the pediculus pubis has since been verified by Duguet, who produced them artificially by inoculation with a paste prepared by bruising the pediculi with water. Jamieson regards them as pathognomonic of the presence of the crab-louse.* This affection is met with among all classes of the community, but almost always among adults who have contracted it from others labouring under the disease as the result of impure intercourse, or through the medium of the water-closet. Fever is by no means an uncommon accompaniment, and may even run high in sensitive persons. Some think that it is due to a poison introduced by the insect, but it is more likely reflex in character, as it disappears at once when the patient is relieved of his enemies.

Diagnosis.—The following points serve to distinguish phtheiriasis pubis from simple pruritus :—

Pruritus.	**Phtheiriasis pubis.**
1. Not contagious.	1. Contagious.
2. No parasite to be discovered.	2. Lice, their nits and fæces, discovered close to the roots of the hairs.
3. May affect other regions, though not necessarily.	3. Limited to the pubis or neighbouring parts, or to other parts provided with hair (always excepting the head).
4. Often a very troublesome affection, and requiring constitutional as well as local treatment.	4. Readily cured by local treatment—*e.g.*, a lotion of perchloride of mercury (gr. ij to ℥i).

Eczema complicating phtheiriasis pubis is distinguished from simple eczema by the localisation of the eruption, and by the discovery of the pediculi, their nits and fæces.

The **treatment** of phtheiriasis is very simple, although failure often results from a want of system and of perseverance in the use of remedies. Of the many medicines which have been recommended for the extermination of lice, those which are most serviceable, and most generally employed, are carbolic and salicylic acids, the preparations of sulphur, mercury, staphisagria, sabadilla, pyrethrum, the essential oils, and alcohol.

Carbolic acid may be employed in the form of soap, ointment, or lotion, as in the subjoined formula.†

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* *Brit. Journ. of Derm.*, Aug., 1889, p. 322.

† ℞ Acidi carbolici crystallizati, ...	ʒij.
Spt. rosmarini, ...	ʒi.
Spt. rectificati, ...	℥ss.
Aquæ destillatæ, ad	℥vi.

Sig., Sponge the affected parts night and morning.

Salicylic acid may be employed in combination with olive oil (a 3 per cent. solution).

Sulphur is used in the form of vapour baths or fumigations, or the simple sulphur ointment of the Pharmacopœia may be employed.

Mercury may be applied in the form of simple mercurial, red, or white precipitate ointment, of fumigations with calomel or cinnabar, or of a lotion of the perchloride, as in the following prescription.*

Staphisagria in powder is a very good preparation, or an ointment made by mixing an ounce of staphisagria with 4 ounces of lard and adding a few drops of an essential oil, as the oil of rosemary, to improve the odour. Or an infusion of staphisagria may be made with vinegar.

Sabadilla is employed either in powder or ointment, the latter consisting of a drachm of sabadilla to an ounce of lard, and scented as above.

Pyrethrum is generally applied in powder. Any of the essential oils may be used, the oil of rosemary being generally selected.

In the case of lice attacking the head, it is not absolutely necessary to cut the hair short; but if the disease occurs in children it is better to do so, especially if the scalp is the seat of secreting eruptions, as we thus remove the nits adhering to the hair, and get more readily at the pediculi. A lotion of the perchloride of mercury, or of carbolic acid, or a 3 per cent. solution of salicylic acid in olive oil, or an ointment of staphisagria or white precipitate should be applied, which causes the death of the parasite. It is necessary, besides, to remove the nits, which may be done by applying repeatedly either alcohol or dilute acetic acid, as Hebra recommended. These, after the use of the spirit, cease to adhere to the hair, and may shortly afterwards be removed with the aid of a fine tooth-comb. The head should also be repeatedly washed with soap and warm water. The eruptions of the scalp left after the removal of the insects must be treated according to their nature.

It may sometimes be advisable, however, to treat in a partial manner the eruption of the scalp *before* we attempt to kill the insects; because in some cases the pediculi and nits are hidden by the crusts and thus protected from the action of the parasiticide (see p. 193).

There is just one remark which remains to be made with regard to the treatment of phtheiriasis capitis—one which has been very promi-

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* ℞ Hydr. perchloridi,	gr. xij.	
Spt. rectificati,	℥i.	
Aquæ destillatæ,	℥v.	
Olei Rosæ,	♏i.	—*M.*

Sig., Sponge the affected parts night and morning.

nently brought forward by Devergie—and it is this, that in those cases where the head has long been attacked by great numbers of pediculi, especially in the case of children, it may not be without danger to eradicate them suddenly, for by so doing internal diseases are said to have been developed; and Devergie tells us that he has seen two infants who died from this sudden cutting short of the accustomed itching and secretion. It may, therefore, be occasionally more prudent to cure the disease more slowly, to attack only small portions of the head at a time, and especially to avoid cutting short the whole of the hair at once. It is only in very rare instances, however, that such precautions are required.

In the treatment of phtheiriasis corporis, a point of the first moment, one which is far too much neglected, and which leads to many ineffectual efforts to cure the disease, is to destroy all the pediculi and nits which adhere to the underclothing. This may be done in a variety of ways. That which is most expeditious and most easily carried out is to put all the washing clothes repeatedly into *boiling* water before having them washed, and, before they are again worn, to expose them to a temperature of at least 220° Fahrenheit in an oven. It is useful, too, to sprinkle some of the powder of staphisagria upon them, or, as the common people do sometimes, to bury them in hay for several weeks.

The skin itself may be attacked with sulphur vapour baths, or mercurial fumigations, or the ointment of staphisagria, or the carbolic acid or corrosive sublimate lotions. On the whole, however, ointments are preferable, for greasy applications, apart altogether from the active ingredients which they contain, do good by tending to close up the spiracles through which the pediculi breathe, and to induce asphyxia. The pruriginoid eruption which the itching has occasioned disappears after the pediculi have been killed; but other eruptions, such as eczema, which may have been called forth by the scratching, or which existed previous to the occurrence of the lice, may require to be treated on general principles. When an eczema exists it may sometimes be necessary to treat it to a certain extent first of all (on the same principle as an ordinary eczema) before attacking the pediculi; for they are very apt to lie hidden among the crusts, and soon multiply again, giving as much annoyance as before.

It not unfrequently happens that, although all the pediculi have been killed, the itching continues in a mitigated form, owing to the cutaneous nervous filaments having contracted the habit, if I may be allowed the expression, of calling forth itchy sensations. If this is the case, the patient may be directed to wash the parts with a lotion of hydrocyanic acid (in the proportion of 10 to 30 minims of the dilute acid to the ounce of water), or, if it fails, an ointment containing the oil of cade may be of service.*

The pediculus pubis is easily killed by rubbing into the roots of the hair a lotion of perchloride of mercury, which is invariably effectual, provided it be brought into direct contact with all of them. The application should be made not only to the hair of the pubis, but also to that in the neighbourhood of the scrotum, perinæum, and anus, and should be repeated daily for several weeks.

But, if any excoriation exists, care must be taken not to use the lotion too freely, else salivation may possibly be induced. In cases where there are many excoriations or abrasions it is safer to use an ointment of sulphur or staphisagria. Mercurial ointment is the preparation most in vogue for this complaint, but it is a dirty application, and should never be employed. The same care must be taken to remove the nits as in the case of the head lice, else the malady may be indefinitely prolonged.

There are very many other remedies which have been successfully used, but it is quite unnecessary to allude to them further, for those already mentioned are amply sufficient, when properly used, to kill the pediculi, no matter how numerous they may be.

In addition to the local treatment, the health must be carefully attended to on general principles, and in those numerous cases in which the disease occurs in half-starved, broken-down subjects, the cure is vastly accelerated by a generous diet, and full doses of cod-liver oil.

3. The *Acanthia lectularia* (Cimex lectularius), or common bed-bug, remarkable for its reddish colour, roundish flattened form, and offensive odour, resides partly amongst the bed and body clothing, but principally in crevices in the woodwork of beds, walls, &c., where it deposits its eggs, and whence it sallies forth to feed upon the blood of its victims. It is said not to be met with in South America, Australia, or Polynesia, but Dr. Murray of Wallgett, New South Wales, tells me that this is not true with regard to Australia at least, the houses in the Bush, which are mostly built of wood, being literally alive with them. It is unfortunately endemic in this country in the habitations of the poor, and it is difficult to extirpate it, because it can resist extreme degrees of cold, can live without food even for a year, and it hides itself by day.

Its bite produces a swelling like a spot of nettlerash, but it is

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* ℞ Hydr. ammoniati,	
Olei cadini, āā, ...	ʒi.
Glycerini amyli, ...	ʒij.
Ung. zinci benzoati, ...	ʒiv.

Sig., Rub a little firmly into the affected parts night and morning.

distinguished from it by the discovery of the bite in the centre, which, unlike the surrounding redness, does not disappear on pressure. The irritation of the bite, too, as well as the crawling of the parasite upon the surface, is apt to excite nettlerash over the whole body, which diminishes or disappears by day, to reappear at night. The itching is great, and the scratching proportionally vicious. "As the wheals are very large, the two or three middle fingers of the hand are used in scratching, so that the excoriations are apt to be characterised by two or three parallel strips" (Kaposi).

This eruption may be mistaken for that of idiopathic urticaria (nettlerash), but in the former the nettlerash disappears or moderates by day, the bites of the parasites are to be found in the centres of some of the nettlerash spots, the itching is more intense, and the excoriations are apt to present the characters just mentioned, while a search for the offender will usually clear up the mystery.

The parasite, though very tenacious of life, can be readily destroyed by the use of powder of stavesacre, or "Persian insect powder," provided that they are brought into direct contact with it. This should, therefore, be sprinkled over the clothing, and inserted into the crevices of the beds, walls, &c., and the application requires to be repeated at intervals for some time until the products of the eggs are exterminated, as well as the parents which laid them. For the relief of the itching, the parts may be sprinkled with vinegar, Eau de Cologne, Goulard's lotion, or lotions containing hydrocyanic acid * or liquor carbonis detergens.†

4. The *Pulex irritans*, or common flea, is smaller than the bug; it "is short, shield-shaped, formed of one piece," and its bite is effected by means of "a bristle-like tongue, which is covered by two maxillæ of the form of two sword-blades" (Küchenmeister). The power and elasticity of its legs are very remarkable, enabling it to leap about two hundred times the length of its body, and thus to ellude the attempts of its victims to entrap it. Its eggs are about one-third of a line in length, are oval, and of a white colour, and are deposited "indifferently in dust and on furniture, and in dirty people under the nails" (Kaposi). It is said to be unknown in Australia, but Dr. Hamilton, of Adelaide,

* ℞ Acidi hydrocyanici dil, ... ʒij.
Glycerini, ... ʒiij.
Aquæ rosæ, ... ℥vi. —*M.*

† ℞ Liquoris carbonis detergentis, . . . ℥i.
(Wright & Co.)
Glycerini, ... ʒiij.
Aquæ destillatæ, ... ℥v. —*M.*

writes me that it thrives and abounds there just as much as in the Dublin slums.

Its bite does not produce itching, but it causes a minute hæmorrhage surrounded by a bright red inflammatory areola with some swelling; the latter disappears on pressure, but the former does not. This minute hæmorrhage passes through the same stages as that resulting from a bruise, and disappears much more slowly than the areola. If the skin be very delicate, as in the case of children, an eruption of nettlerash may make its appearance, and in that case itching is present. The hæmorrhages produced by the bites of the parasite may be mistaken for spots of purpura, from which they may be distinguished by attention to the following points :—

Bites of the Pulex irritans (*common flea*).	**Purpura spots** (*Stigmata*).
1. Fleas or their dark brown fæces detected on the bedding.	1. Not present.
2. Hæmorrhages surrounded at first by inflammatory areolæ.	2. Not so.
3. Spots of uniform size.	3. Not of uniform size.
4. Specially met with where the clothes closely embrace the body.	4. Not so.

Fig. 74.

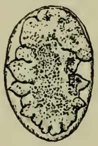

Fig. 75.

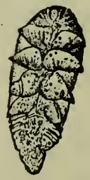

Fig. 76.

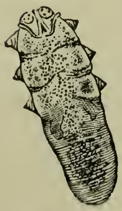

Fig. 77.

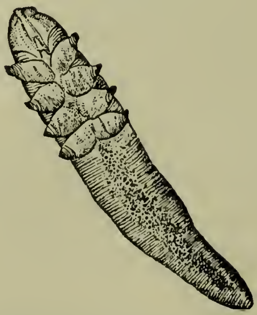

Fig. 74. Ovum of acarus folliculorum, in an advanced stage.
Fig. 75. Young individual shortly after its escape from the ovum; ventral aspect.
Fig. 76. Another young specimen, further advanced; dorsal view.
Fig. 77. Small but full-grown individual; ventral aspect.

The remedies already indicated under the head of phtheiriasis (see p. 631) are equally effectual for the destruction of fleas.

5. The *Acarus folliculorum* (Demodex folliculorum) was discovered by Henlé in 1841 in the ceruminous, and by Gustav Simon in 1842 in the sebaceous glands. Considerable variations are observed in their size and shape, as well as in the number of their legs—variations which are supposed to represent different stages of development. Even ten or more are sometimes to be discovered in one sebaceous or hair follicle; they lie for the most part lengthwise in the midst of the sebaceous matter, near the surface, and with their heads directed inwards. They are easily detected by squeezing out the contents of the follicle—although they are not found in every one—adding a little glycerine, and examining with a low power of the microscope.

Fig. 78.

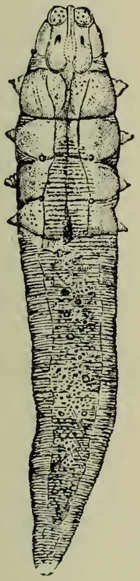

Fig. 79.

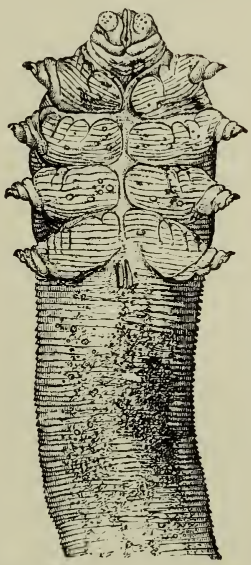

Fig. 78. Fully matured specimen; dorsal view.
Fig. 79. Under surface of anterior portion of body, very highly magnified (*Nayler*).

The accompanying illustrations (see Figs. 74 to 79) give so good an idea of the appearance of these animalcules and their eggs as to render a detailed description of them unnecessary. It might be supposed that they have some connection with the occurrence of comedones or of acne, but repeated investigations have led to the belief that, while they feed upon the sebaceous matter, they are met with in the follicles of most healthy persons, especially in those who have thick greasy skins, and do not give rise to any symptom whatever in the human subject. The investigations of Gruby and of Sparks, however, show that in dogs they induce loss of hair, scaliness, abscesses, and loss of strength. All the dogs examined by Dr. Sparks finally died.

6. *Cysticercus cellulosæ cutis.**—The frequency with which the skin, as compared with other organs and tissues, is invaded by this parasite has been variously estimated at from 5 to 10 per cent., so that, especially in this country, it is a rare affection, and its true nature may readily be overlooked.

It gives rise to little nodules or tumours in the subcutaneous cellular tissue, varying in size from that of a lentil to that of a walnut—usually about the size of a pea; and the difference in size depends upon whether the cysticercus is alive or dead, upon the size of the caudal vesicle, and upon the presence or absence of inflammatory reaction. The tumours are usually numerous, and are most commonly met with on the back, sides of the chest and abdomen, and extremities: they are round, smooth, firm, and elastic, slightly movable, covered by normal skin, and quite painless unless inflammation has occurred. It is only in exceptional cases that they terminate in abscess formation, but sooner or later calcification occurs.†

The disease most likely to be mistaken for it is syphilitic gummata.

Syphilitic gummata.	**Cysticercus cellulosæ cutis.**
1. History of syphilis.	1. None.
2. Other manifestations, or traces of bygone syphilis.	2. None.
3. Tumours larger, more likely to be adherent to the skin, and often suppurate, leaving characteristic syphilitic sores.	3. Tumours generally of size of a pea, movable and rarely suppurate.
4. On excising the tumour no parasite detected.	4. On excising the tumour the cysticercus detected, or, if punctured, the hooklets found in the serous contents.

The **treatment** consists in excision, or puncture and the application of caustic.

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* See *Handbook of Diseases of the Skin*, edited by H. v. Ziemssen, M.D., p. 549. New York: William Wood & Co., 1885.

† An interesting case of this affection is recorded by Dr. Pye-Smith, *Brit. Journ. of Derm.*, Nov., 1892, p. 366.

7. GUINEA-WORM DISEASE.

Parasite, Filaria Medinensis.

By James Christie, A.M., M.D.

This disease is due to the presence and growth, subcutaneously, of the dracunculus or filaria medinensis, and is of frequent occurrence in tropical countries, more especially in Asia, Africa, and certain of the West Indian islands. But, even within the tropics, it is a regional disease, its most frequent habitats being Senegal, Gaboon, the Gold Coast, Guinea, Grenada, the Island of Curaçoa, Upper Egypt, Nubia, Arabia, Petræa, Persia, and the East Indies.

The disease is not exclusively confined to man, as cases have been met with in the dog and horse. It is most prevalent during the wet and rainy seasons, and specially so after inundations.

It is probable that the parasite invariably enters by the skin, as a microscopic filarida or tank-worm; and that, under the skin, it develops into the filaria medinensis.

The filarida, or tank-worm, which is in size about $\frac{1}{3300}$ of an inch, bores through the skin, the parts affected being chiefly the lower extremities, and generally the feet and ankles, but the worm may migrate to other parts of the body. The water-carriers of India (Bheestees), who carry their mushuk or skin bag suspended from the shoulders, have most frequently the disease on that part of the body. After reaching the cellular tissue, the filarida grows for from eight to twelve months, the period of incubation of the disease. The full-sized worm is from $1\frac{1}{2}$ to 3 or 4 feet in length, milk-white in colour, cylindrical, but somewhat flattened laterally, tapering towards the extremities, and from $\frac{1}{10}$ to $\frac{1}{15}$ of an inch thick. When at full maturity, it may be felt like a piece of thin whip-cord under the skin; and it bores its way, head first, through the skin. Considerable systemic and local irritation is excited, a small boil is formed, the skin breaks and the head of the worm protrudes.

Treatment.—When the head of the worm protrudes, the natives generally secure it, and prevent retraction by fastening it. to a small piece of stick, or to a quill. They then make gentle traction, and wind it out daily; but several weeks may elapse before it is completely extracted. If broken, during the process, severe inflammation may be set up. The natives of India also extract the worm by suction with or without incision. When the head of the worm protrudes, no incision is necessary; but, when this is not the case, the operator searches for the head of the worm which is almost invariably situated towards the extremity. He then rubs the skin over the worm with the points of his fingers for some time, and makes two small incisions, over which he applies a trumpet-shaped tube-horn, about one foot in length. He then sucks at the small end of the tube, closing the orifice with his tongue while recovering his breath. On removal of the instrument, a clot of blood with the complete worm is presented. It is said that by this means the worm can be speedily and certainly extracted. If so, the Guinea-worm could be easily removed by the use of an aspirator.

The barber-surgeons of Bombay operated as follows a quarter of a century ago, the implements being a needle and a razor :—The central portion of the worm was sought for, and the skin over it was raised by the point of the needle. A small piece of the skin was sliced off by the razor, and the wound was deepened by the needle until the worm was seen. The operator then passed the eye end of the needle under the worm, and brought up a loop. He then exerted gentle traction on each portion alternately till he got the one end out, and then he dealt with the other. When he found that the worm had fixed itself by means of the hook at the head extremity, he applied heat and friction over the head to make it yield its hold. By these means, the worm was extracted at one sitting.

Dr. Forbes Dick recommends extraction as follows :—When the worm can be felt at more than one spot under the skin, select a spot one-third from its anterior extremity which is always farthest from the heart of the patient. The worm can hold by its anterior end, and equality is thus endeavoured to be established between the amount of resisting force of each end. An incision, about an inch long and three-quarters of an inch deep, is then made in the line of the worm, and an aneurism needle is passed round it. Dr. Dick says :—"It is preferable that two pairs of hands should be ready to steadily and continuously pull, hand over hand, in opposite directions, without a moment's interruption, each end of the worm. In the majority of cases, when the needle is passed round the worm, a foot or more will come out on the double, without perceptible resistance; but subsequently, the resistance of the farther end and the contractility of the worm come into play. But these obstructions, unless the distance of either end is too great, or the worm is much entangled in tendons or joints, will not prevent it from following on traction." Interruption to the pulling must be guarded against.

Electrolysis has been recently recommended by Dr. Faulkner in the treatment of Guinea-worm; but we are informed by Dr. Reynolds that the galvanic battery was used in India twenty-five years ago. The patient was directed to hold one pole of the battery in one of his hands, and the other pole was applied to the head of the worm. Slight and gentle traction was then applied to the worm; and, in a short space of time, the whole of it was extracted entire.

B. SYPHILITIC AFFECTIONS OF THE SKIN.

(*a.*) Acquired Syphilis.

As is well known, there are three forms of primary venereal disease:—

1. Gonorrhœa, which may induce orchitis or bubo, or may lead to an affection of the eyes (Gonorrhœal Ophthalmia), or of the joints (Gonorrhœal Rheumatism), but which never otherwise affects the system.
2. The non-infecting (soft) chancre, which is always a local sore, though it may spread by inoculation of neighbouring parts, or by absorption of the secretion by the lymphatics, producing suppuration of a neighbouring gland, the pus from which is identical with, and as infectious as, that secreted by the sore itself.
3. The infecting (hard, indurated, or Hunterian) chancre—which, however, is not invariably hard and indurated—which always infects the system, unless in rare instances, when the patient has previously suffered from syphilis, when it *may*, apparently, escape re-contamination.

It is only the last of these three forms of venereal disease which is of interest to us at the present time, because it alone can give rise to skin affections; but, in the diagnosis of the latter, it is often of importance to decide whether a sore preceding a given eruption has been of a non-infecting or of an infecting character. With the view of elucidating this point, the following table is appended:—

Infecting Chancre.	Non-infecting Chancre.
1. Four times less frequent than non-infecting chancre.	1. Presumption always in favour of non-infecting chancre, being so much commoner.
2. Appears from ten days to six weeks after exposure to infection.	2. Appears within a few days of exposure to infection.
3. Often more like an abrasion of the cuticle than a distinct ulcer; cup-shaped, and with an ash-grey base; rarely attacked by phagedæna.	3. A distinct ulcer, usually with perpendicular edges, as if made with a punch; base irregular and honey-combed, often attacked by phagedæna.

4. Hard—sometimes of almost cartilaginous consistence—and distinctly circumscribed. Induration absent in one-twentieth of cases in men, and oftener in women.	4. Often some hardness from simple inflammatory infiltration, but never cartilaginous; not so distinctly circumscribed, and though edges may be hard, centre usually soft enough to allow sore to be doubled up between fingers.
5. Secretion scanty, thin, and watery.	5. Secretion abundant and purulent.
6. Inoculation of secretion produces hard chancre in others, especially if they have not had the disease; but not usually auto-inoculable, because one infecting chancre generally protects the system from a second.	6. Inoculation of secretion produces soft chancres in person affected, as well as in healthy persons, because one soft chancre is no protection against others.
7. Generally solitary, but if more than one chancre they commence at same time, for reason above given.	7. Often a succession of soft sores from inoculation of neighbouring parts by pus from original sore, for reason above given.
8. Heals readily unless irritated by treatment.	8. Heals with difficulty.
9. Cicatrix comparatively trifling, and may disappear entirely.	9. Cicatrix more marked, and generally permanent.
10. Usually followed within a few weeks by indolent non-suppurating enlargement of neighbouring glands (in inguinal regions if chancre on penis).	10. Often followed by absorption of virus from sore, and suppuration of one gland, the pus from which is virulent, like that from the sore itself.
11. Almost always followed by constitutional symptoms, unless patient had the disease before, when they *may* be absent.	11. Not followed by constitutional symptoms.
12. Mercury hastens healing of the sore, and disappearance of the induration.	12. Mercury generally has no effect upon it, or may even retard healing process.

It is right to mention that the infecting chancre is not uncommon on other parts than the genital organs, and that it does not necessarily result from impure connection. I have often met with it on the fingers of medical men, who have been inoculated in making vaginal examinations; on the lip—generally as the result of inoculation of the secretion from secondary sores on the lips of patients suffering from syphilis, or of infants affected with hereditary syphilis, and from smoking pipes or cigars which have been in the mouths of syphilitic subjects. It may also be communicated by the use of Eustachian catheters or other instruments, previously employed in the case of patients tainted with syphilis, and not properly cleansed, and occasionally through the medium of vaccine lymph (especially if mixed with blood) taken from a syphilitic child. Finally, to show how unexpectedly syphilis may be transmitted, the following case, reported to me by my friend Dr. Hector C. Cameron, may be mentioned:—"A man having a 'black eye,' a friend, who had syphilitic sores in his mouth, endeavoured to cure it by puncturing the part and sucking it. Three weeks thereafter a hard chancre appeared at the site of puncture, followed by neighbouring adenopathy, syphilitic eruptions on the skin, &c.

The course of syphilis may be modified or interrupted by intercurrent diseases, especially fevers, which may cause the disappearance of the symptoms for a time, but only while the fever lasts; and, in those who are tainted, manifestations of syphilis may be brought out in various ways. Thus, excessive smoking may call forth, or keep up indefinitely, syphilitic ulceration of the mouth, tongue, and throat, and a blow or injury of any kind may induce manifestations at the part injured. They may also be called forth by excessive bodily fatigue or mental anxiety. Hardy mentions the case of a man who was shipwrecked, and who for many hours was in a most precarious position; fifteen days thereafter a severe tertiary syphilitic eruption made its appearance, although twenty-five years had elapsed since the entrance of the poison into the system. Syphilitic eruptions may also be called forth by the employment of irritating local applications, such as sulphur ointment; and at some thermal establishments—Aix-la-Chapelle, for example—this circumstance is utilised with the view of determining whether the poison in the system is still active and requiring treatment.

Finally, hot weather has sometimes the effect of calling forth cutaneous manifestations of syphilis, and, on the same principle, the skin and superficial parts are most apt to suffer in warm, the deeper parts in cold, climates.

There is a very general belief, founded upon analogy with similar affections, that syphilis is a bacterial disease. Indeed, Birch-Hirschfeld has found cocci united into chains in indurated chancres, condylomata, syphilitic papules, and gummy tumours; and Lustgarten has discovered bacilli which stain like those of leprosy and tubercle, but which, unlike them, are decolorised by washing in nitric and hydrochloric acids, although other observers have found similar bacilli in normal secretions. So that it must be admitted that unmistakable demonstration of the bacterial view is still wanting.

Syphilitic eruptions are generally divided into two classes:—

1. Secondary eruptions (early manifestations).
2. Tertiary eruptions (late manifestations).

This merely means that some have a tendency to appear soon, others long after the entrance of the poison into the system; and it may be remarked, in passing, that the character of the eruption depends a good deal upon the intensity of the poison, and upon the general health and constitution of the patient. Hence an eruption, as has been observed by Ricord, is likely to be of a dry nature when the constitution is good, while there is a great tendency to suppuration and to ulceration under opposite conditions—a circumstance which must be borne in mind in connection with the treatment. But, while the division of the manifestations of syphilis into secondary and tertiary is quite justfiable, it must never be forgotten that the so-called tertiary symptoms not unfrequently appear in the secondary stage, although the reverse is rarely observed. Syphilitic eruptions are variously named—sometimes from the predominating elementary lesion (*e.g.*, papular syphilitic eruption, tubercular syphilitic eruption, &c.), sometimes in accordance with the non-syphilitic eruptions which they most resemble (*e.g.*, roseola syphilitica, psoriasis syphilitica, &c.), to which there is no objection *so long as it is understood that there is no real relationship, but only a resemblance, between them.*

Before considering the eruptions in detail, it may clear the way if we refer in the first instance to the

General Diagnosis of Syphilitic Eruptions.

The following points must be attended to:—

1. *The History of the Case.*—A clear history of an infecting chancre is often of great value in diagnosis, but it is often difficult to obtain, partly from a desire for concealment on the part of the patient, partly because he may have forgotten or may even be ignorant that he has ever suffered from such a lesion; and even when got it is only of value if the interval of time which has elapsed between the contraction of the disease and the appearance of the eruption is in fair accord with the natural history of the disease. Thus, a roseola making its appearance years after the contraction of the chancre has evidently no connection with it, seeing that it usually occurs within a few months of infection; and an eruption of groups of large tubercles occurring within two or three months of infection has probably no connection with it, for this form of eruption has little tendency to manifest itself in the early stages of the disease.

2. *The Detection of Concomitant Symptoms of Syphilis.*—The earlier syphilitic eruptions are apt to be associated with such symptoms as superficial symmetrical ulceration of the throat and mouth generally, enlargement of the posterior cervical glands, falling out of the hair,* iritis, &c., the later eruptions with painful nodes upon the shins and other superficial bones, enlargement of the testicle, little subcutaneous tumours, and syphilitic diseases of internal organs.

3. *Syphilitic eruptions are usually symmetrical*, and this may be of value in diagnosis, in helping to distinguish, for example, ringworm of the body, which is usually unsymmetrical (being due to a local cause), from a circular syphilitic rash resembling it. It is right, however, to remark that this feature applies only to the earlier, and not to the later manifestations, the latter, according to Hutchinson, being "due rather to the ill-constitution of the affected structures than to any free virus still circulating in the blood."

4. The eruption is often *polymorphous*, that is to say, it is common, in connection with the earlier manifestations at all events, to find two or three different kinds of eruption at one time on the same patient. Thus it is far from unusual to see a papular eruption (Lichen syphiliticus) mingled with a roseolous one (Roseola syphilitica), and also an eruption of flat tubercles (Condylomata) at the anus.

5. Syphilitic eruptions often assume a raw ham or *coppery tint*, especially after they have been present for some time; they thus contrast with the majority of simple inflammations of the skin, which are usually more or less rosy, and with strumous eruptions, which are violet in tint. It must be remembered, however, that the patches of non-syphilitic psoriasis have sometimes a somewhat coppery colour, although it is not usually so intense as in a typical chronic syphilitic eruption, and that non-syphilitic eruptions below the knees, especially

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* Loss of hair (syphilitic alopecia) is one of the earliest and most frequent of the manifestations of syphilis, and is due to interference with the nutrition of the hair follicles by the taint in the blood, although it is attributed by Hebra to the occurrence of seborrhœa of the scalp. There is a general thinning of the hair (usually of the head only), which comes away very readily on combing, and gives rise to much alarm lest it may be sufficiently extensive to excite remark. This, however, is not usually the case. It is generally, too, a temporary condition. If the hairs are examined they are found to be pretty healthy, except that the bulbs are atrophied; and there is nothing in the alopecia itself characteristic of syphilis, or different from that which is observed from other causes—*e.g.*, after a severe attack of fever. The diagnosis can only be made from the history of the case, and from the simultaneous or subsequent appearance of other and characteristic lesions of syphilis. Of course, we do not include in this description the patchy loss of hair which occasionally results from eruptions (mostly suppurative or tubercular) on the scalp, especially in the late stages of syphilis, which is due to destruction of the hair follicles, and is therefore permanent and associated with cicatrices.

if complicated with varicose veins, may assume a pretty deep brown colour.

6. There is usually an *absence of pain and itching;* the latter, however, may be present in connection with the later manifestations, but rarely in the earlier stages of the disease, unless when the eruption is situated upon hairy parts, or at parts which are habitually in contact with one another, as at the anus. Generally speaking, however, itching is absent, and this is a point which is sometimes of the greatest value in the diagnosis of syphilitic from non-syphilitic eruptions, such as eczema and scabies, in which it is usually a very distressing symptom. But it must not be forgotten that a patient may be suffering at one and the same time from a syphilitic eruption and an itchy skin disease such as scabies, which I have known to lead to errors of diagnosis.

7. Syphilitic eruptions have a great tendency to assume the *circular form,* or to appear in the shape of segments of circles when the healing process has commenced. This character, however, is not peculiar to them, but is shared by other diseases, especially by psoriasis, vegetable parasitic, and strumous affections, and must not therefore be trusted to alone.

8. The characters of the *scales, crusts, and ulcers* sometimes afford assistance in the diagnosis. The scales are usually thin, adherent, and greyish, although they are occasionally silvery like those of non-syphilitic psoriasis, and this may be a source of confusion. The crusts when typical are thick, rough, very adherent, and have a greenish colour, while the ulcers are round, with perpendicular edges, and ash-grey bases, and the skin around has usually a coppery tint.

9. *The cicatrices* are sometimes characteristic, for, when they are round and have sharp and coppery edges, they may be assumed to be the result of a bygone syphilitic ulceration, unless perhaps when they are situated upon the legs, where the syphilitic appearances are sometimes simulated.

10. *An examination of internal organs* may afford important information. Amyloid disease of the kidneys, liver, spleen, blood-vessels of the stomach, bowels, &c., is usually the result of some wasting disease, of some long-continued suppuration, or of syphilis; and, in the absence of the two first causes, a syphilitic taint may be shrewdly suspected. It is in the later stages of syphilis, however, that this complication is apt to ensue.

11. Finally, a course of *anti-syphilitic treatment* may generally be relied upon in doubtful cases to clear up the diagnosis, a syphilitic eruption speedily improving, while a non-syphilitic one is generally either not affected or aggravated thereby.

Having thus dwelt at some length upon the general diagnosis of syphilitic eruptions, it will be unnecessary to enter so fully upon the individual forms, all the more as the treatment depends, not so much upon the form which the eruption assumes, as upon its syphilitic parentage, and the remarks which follow must be taken along with those which have just been made.

I.—SECONDARY ERUPTIONS (EARLY MANIFESTATIONS OF SYPHILIS).

These generally begin to make their appearance from a month to six weeks after the development of the chancre, and, at the outset, are often accompanied by some disturbance of the system, and febrile symptoms, especially if the manifestations appear rapidly and in abundance, but the fever soon subsides, although the patient has an appearance of ill-health, and the skin assumes a dirty earthy tint, which becomes more marked the longer the poison has been in the system (Cachexia syphilitica).

1. EXANTHEMATOUS SYPHILIDES.

(*a.*) *Roseola syphilitica.*—This is the earliest and the most constant of syphilitic eruptions, appearing usually about six weeks after the development of the chancre. It is very apt to be overlooked, but is not invariably present, as some have asserted. It is oftenest met with on the trunk (especially on the anterior surface) of the body, often on the insides of the limbs, as well as upon the palms and soles, but is rarely observed upon the face and neck.

It consists of oval, rounded, or irregular blotches, varying in size from that of a pea to a shilling, which in the early stage may be slightly elevated, and unattended by either heat or itching. At first they have a rosy or dusky-red tint, the colour disappearing on pressure; but later they may assume somewhat of a coppery appearance, and they may leave behind for some time brownish or yellowish pigmentary stains, which, of course, do not disappear on pressure. This eruption gives to the skin a peculiar mottled appearance, and, if slight, is very apt to be overlooked unless the body be regarded from different points of view. It may appear gradually and without reaction, or suddenly and with fever, sometimes as the result of an exciting cause, such as taking a hot bath or a bout of drinking. Its duration varies from two or three weeks to two or three months, but once it has gone it has little tendency to reappear.

It is almost always associated with other syphilitic lesions, such as an indurated cicatrix at the site of the chancre, superficial ulceration of the fauces and at the angles of the mouth, nocturnal pains in the head and joints, enlargement of the glands at the back of the neck, alopecia, or one or more of the other secondary eruptions about to be mentioned.

It somewhat resembles the eruption of *Typhus*, but the latter is of short duration, is more dusky in tint from the first, after a day or two does not entirely disappear on pressure, and commences from the fourth to the seventh day after the appearance of the constitutional symptoms, which are so pronounced as to be quite sufficient of themselves to prevent error.

It may be distinguished from *Morbilli* (*Measles*) by the following circumstances :—The eruption in measles appears on the fourth day on the temples and nape of the neck, whence it spreads forwards to the face and down the body, appearing last on the lower extremities ; it is more papular in character, crescentic in outline, of a brighter tint, and begins to fade in four or five days. It is also preceded and accompanied by catarrh of the eyes and respiratory tract, and often other members of the family are attacked, while there is an absence of other signs of syphilis or history of contagion.

The *Roseola* sometimes resulting from the administration of copaiba may be known from its usually occurring in persons who are labouring under gonorrhœa and who have been taking that medicine, from its commencing usually about the wrists and being common on the face, from its being very itchy, and soon subsiding after the removal of the cause, and from the absence of other signs of syphilis unless as a coincidence.

(*b*.) *Erythema syphiliticum* differs from roseola syphilitica in that the patches are larger and less numerous, and, though they may commence about the same time, they often remain long after it has disappeared. They may also reappear even years after the entrance of the poison into the system, which roseola rarely, if ever, does.

Simple Erythema should not be confounded with it, for the former often appears upon the face, the patches are lighter in colour, less stationary, less chronic, and accompanied by itching or heat, and without a history of syphilis or the presence of other syphilitic manifestations.

2. PAPULAR SYPHILIDES.

Syn.—*Lichen syphiliticus.*

This is an early and frequent secondary eruption, though not so constantly present as roseola. It rarely appears suddenly and with fever, but frequently in successive crops, so that the papules are often seen in different stages of their development. It may appear on any part of the body, but oftenest on the neck, back, and sides, and it is not uncommon on the palms and soles. The papules may be of small size, from that of a millet-seed to a split-pea, and considerably elevated, but sometimes, instead of, or mixed with, these, large flat papules from the size of a fourpenny to a sixpenny piece are observed (papulo-tubercular eruption—lenticular syphilide—the "syphilide papuleuse plate" of the French). The eruption, which is not itchy, has at first a rosy tint and disappears on pressure, but later it is apt to become coppery in colour and to leave pigmentary stains behind it. In the second stage desquamation occurs at the summit of the papule, and the partially detached epidermis thus forms a narrow white fringe near the edge of each, which is very characteristic.

Sometimes the papules suppurate at their summits (Lichen syphiliticus pustulosus—Acne syphilitica), and the pus dries into brownish crusts, which leave, on falling, coppery stains, or even minute ulcers followed by slightly depressed cicatrices.

The eruption may be scanty, and the papules scattered (Lichen syphiliticus disseminatus), or very abundant and closely packed (L. S. confertus), or in clusters (L. S. corymbosus), or forming circles or segments of circles (L. S. annulatus).

The papular syphilides may last from several weeks to several months, especially if they appear in successive crops, and no appropriate treatment be adopted. When the soles and palms are attacked, owing to the thickness of the cuticle, the papules are not well developed, but the epidermis over them is apt to become hard and horny: finally the cuticle exfoliates, and round coppery stains are left. Occasionally, too, they become confluent, and complicated with fissures (Syphilide cornée of Biett).

Ordinary *Lichen* (Eczema lichenoïdes) cannot readily be mistaken for a papular syphilide, seeing that it is intensely itchy, has no tendency to assume a coppery tint, and is unaccompanied by other manifestations of syphilis.

Syphilitic acne might possibly be mistaken for ordinary *Acne* (Acne vulgaris), but the latter is a much more chronic affection, often lasting for years, has a special tendency to commence at puberty, is not so coppery in tint, and is generally located on the face, shoulders, and upper part of the front of the chest, while the seats of predilection of syphilitic acne are the extremities and head. In the former also there is the absence of a syphilitic history, or of any concomitant syphilitic lesions.

3. CONDYLOMATA (MUCOUS PATCHES)

constitute one of the earliest and most frequent of the earlier manifestations, though they sometimes persist for months after the others have disappeared. Their seats of predilection are :—

1. On the mucous membranes of the genital organs and mouth, being especially frequent on the fauces where they are often symmetrical and kidney-shaped, on the insides of the lips, and on the sides of the tongue.

2. At the junction of the skin and mucous membrane, especially at the anus, at the margins of the labiæ, at the angles of the mouth, and at the edges of the nostrils.

3. Where folds of skin are in contact with one another, being favoured by the heat, moisture, and friction to which these parts are subjected, as at the umbilicus, in the axillæ, beneath the mammæ, between the toes, &c. At these parts they are specially liable to occur if there be not great attention to cleanliness.

The eruption consists of soft tubercles from the size of a pea to that of a very small marble. Their edges are distinctly circumscribed; sometimes they are of the same colour as the skin, sometimes of a reddish tint; and their summits are rounded, except where opposed tubercles are pressing against one another, when they become flattened on the top. Sometimes they are isolated; at other times they occur in groups. At first they are dry, but soon their summits have a tendency to become excoriated, exuding a nauseous whitish fluid loaded with macerated epithelial cells; often they are the seat of fissures, especially at the anus, and at the angles of the mouth; and less frequently they become ulcerated. On the mucous membrane of the mouth they are very flat, indeed are often hardly elevated at all, and have generally more or less the appearance of superficial ulcers which have been gently touched with caustic.

Mucous patches differ from the syphilitic eruptions hitherto considered, in that they are decidedly contagious in virtue of the exudation above referred to, that itching is a frequent symptom, and that they do not display the coppery tint.

Condylomata must not be mistaken for *warty excrescences*, which, though common in syphilitic subjects, and often occurring as a complication of mucous patches, have nothing specific about them, and are apt to result from the irritation of decomposing secretions, no matter what the nature of these secretions may be. They may be sessile or pedunculated, have a warty appearance, and may occur in isolated spots or in closely set masses like the head of a cauliflower (hence the term cauliflower excrescences, often applied to them); they are not influenced, like condylomata, by anti-syphilitic treatment, and are often cured by mere attention to cleanliness and keeping the parts separate (see Verruca acuminata).

4. SQUAMOUS SYPHILIDES.

To these the term psoriasis syphilitica is often applied, especially when the eruption resembles ordinary non-syphilitic psoriasis, but they must be regarded rather as the second, scaly, stage of various syphilitic affections than as independent eruptions. This is especially true of the papular syphilides, which often become scaly, and assume a psoriasis-like character, especially on the palms and soles, constituting the so-called psoriasis palmaris et plantaris syphilitica. A tubercular syphilitic eruption, too, often becomes scaly and psoriasis-like, and, as this is a late manifestation of syphilis, it follows that the squamous syphilides, though usually secondary, are occasionally tertiary manifestations. In any case the patches of psoriasis syphilitica are usually round, or occur in circles or segments of circles, generally of small size and not very numerous; the scales are usually scanty, thin, and greyish, and rest upon a deep brown or coppery surface, which as a rule is dry, but is occasionally here and there the seat of ulcers, which may be covered with crusts.

DIAGNOSIS OF SYPHILITIC FROM NON-SYPHILITIC PSORIASIS.

Syphilitic Psoriasis.	**Non-Syphilitic Psoriasis.**
1. Eruption *not usually* extensive.	1. Eruption sometimes very extensive.
2. Patches usually very small, and in shape of spots (size of a split-pea), or of small circles or segments of circles (seldom more than an inch in diameter).	2. Patches often very large and irregular: when circular, circles often several inches in diameter.
3. Elbows and knees usually escape: more on inner than outer aspect of limbs: when limited to soles or palms, most frequently syphilitic.	3. Any part of the surface may be attacked, but almost invariably the elbows or knees or head involved.
4. When chronic, eruption usually of a very distinctly coppery tint, sometimes very dark, even nearly black (Psoriasis nigricans).	4. Patches of a dusky-red or light brownish colour, as a rule, though may be coppery.

5. Scales scanty, thin, and greyish.	5. Scales thick, imbricated, white, and more silvery.
6. Itching usually absent.	6. Sometimes not itchy, sometimes intolerably so; generally slightly itchy now and then.
7. May last for months, or even more than a year, when no treatment employed.	7. Often of many years' duration, or even lasts on and off for a whole lifetime.
8. Relapses rare after *all trace* of the eruption has *completely* disappeared.	8. Relapses the rule, and often very numerous, especially in spring and autumn.
9. Rarely commences before puberty, and usually after the age of twenty.	9. Many cases commence long before puberty.
10. Can often be traced to infection.	10. Is often hereditarily transmitted.
11. Patient often cachectic, and concomitant symptoms detected—*e.g.*, roseola syphilitica, lichen syphiliticus, condylomata, sore-throat, alopecia, &c.	11. Patient generally has a healthy appearance, and no special concomitant symptoms.
12. Removed by anti-syphilitic treatment.	12. Removed by treatment applicable to ordinary psoriasis, and not benefited by anti-syphilitic treatment.

5. VESICULAR SYPHILIDES.

When these occur, and they are rare, they appear generally within three or four months of infection. Usually the vesicles are isolated, and some of them may be umbilicated: they are of considerable size, and may resemble those of chicken-pox (hence the term Varicella syphilitica), but they differ from it in that the eruption may last for weeks owing to successive crops, that they are more certainly situated upon an elevated base, are surrounded by coppery areolæ, terminate in small greenish crusts, and leave coppery stains.

More rarely the vesicles are very minute, and closely set together like those of vesicular eczema (hence the term Eczema syphiliticum); but the vesicles do not rupture so readily as those of eczema, are seated on a coppery base, and the secretion dries up into greenish crusts, which, when they fall, leave behind coppery stains; ulcers, too, are much more commonly met with on the patches.

6. BULLOUS SYPHILIDES.

Syn.—*Pemphigus syphiliticus.*

The existence of such eruptions is denied by most authorities—*e.g.*, by Bazin, Hardy, Cazenave, Devergie, and Gibert, but it is admitted by Neumann and Fox, as well as by Ricord who has given the history of a case, accompanied by an admirable illustration of the disease as it attacked the foot, in his splendid treatise on Venereal Diseases.* It is a rare disease, but I have seen several cases, one of which may be mentioned. A gentleman, aged about twenty-five, of fair general health, contracted a chancre in 1862, which was followed by secondary manifestations, for which he was treated by mercury and iodide of potassium. In November, 1863, I treated him for syphilitic disease of one testicle, which entirely disappeared in a few weeks under the use of iodide of potassium.

On January 11, 1864, I was sent for to see him, when the following were the appearances :—I detected a few pustules amongst the hairs and on the face. On the elbows, wrists, hands (especially palms), and on the knees, ankles, and feet, large coppery patches were seen, with pustules scattered here and there. On the palms and soles the skin was undermined in streaky patches by purulent matter. On and about the hands and the points of the fingers, and in the neighbourhood of the ankles, a number of bullæ containing clear serum were detected—about two dozen in all. These varied in size from that of a small bean to a large hen's egg, and exhibited different stages of development, some being very tense, others flaccid, especially those on the points of the fingers. A very few bullæ were detected on the arms and legs, and on the scrotum. There were none on the trunk of the body, with the exception of a few on the back, but two or three were present on the lips, which extended for some distance over the mucous membrane on their inner surfaces.

The throat was unaffected, and the only other sign of syphilis detected was one enlarged gland at the back of the neck. The irritation of the eruption at some points, especially on the scrotum and hands and feet (the palms and soles excepted), was sometimes intolerable, so that the patient could not refrain from scratching and rupturing the bullæ.

The bullous eruption first made its appearance on January 8, at which period the patient stated that "the palms of the hands felt as if they had been sleeping, or had been stung with nettles, and the soles of the feet as if I had been standing on hot bricks." It was preceded for several days by intermitting febrile symptoms, accompanied by long-continued chills, headache, pains in the joints, loss of appetite, restlessness, and debility.

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* *Traité complet des Maladies Vénériennes.* Planche, xxv. Paris, 1851.

An eighth of a grain of perchloride of mercury in extract of cinchona was prescribed three times a day, and a soothing ointment applied to the parts when itchy. By the 30th the eruption had almost completely disappeared, though a few new bullæ and pustules had formed since the 11th. I now ordered him, in addition, to apply a piece of flannel about 4 inches broad round the body, and to smear the inside of it night and morning with a piece of mercurial ointment about the size of a bean. On February 22, when I next saw him, the eruption was completely gone, and on May 17, when he last visited me, he remained quite well.

The diagnosis from *Pemphigus vulgaris* can readily be made by the history of infection, followed by the bullous eruption along with other characteristic secondary symptoms; by the special tendency which the bullæ have to appear on, and in the vicinity of, the hands and feet; by their being situated on a coppery base, yielding readily to anti-syphilitic treatment, leaving coppery stains, and, when once fairly gone, never reappearing.

7. PUSTULAR SYPHILIDES.

There are several varieties of these, one of which is a distinctly secondary eruption, and is described under the head of the papular syphilides (see Lichen syphiliticus pustulosus, p. 649), while the others generally appear as tertiary manifestations, or in the transition stage between the tertiary and secondary symptoms, especially when the general health is much deteriorated, and are described under the name of *Ecthyma syphiliticum.* This eruption, which is commonest on the head and extremities, appears in the shape of dusky-red spots, on each of which a large, often flaccid, pustule forms, or occasionally, instead of a pustule, a small flaccid bulla. Each is surrounded by a dusky-red or coppery areola, and the contents soon dry up into a thick, rough, very adherent, greenish crust, which, if picked off, is apt to be soon replaced. Sometimes the crust becomes very prominent and stratified, owing to the drying-up of successive secretions beneath the primary one, each incrustation being broader than that which preceded it; it then resembles an oyster or limpet-shell, and to this variety the term rupia syphilitica (the Pustulo-crustaceous Syphilide of the French) has been applied. In the advancing stage, on the removal of the crust, ulcers, such as those already described as characteristic of syphilis (p. 646), are found, which, when they heal, leave characteristic cicatrices (p. 646). Sometimes the ulcers of neighbouring patches coalesce, and thus assume a serpentine shape, constituting one variety of syphilitic serpiginous ulceration, the elementary lesion of which, however, is more frequently a tubercle (see Tubercular Syphilides). This eruption usually occurs in broken-down constitutions, and is a serious one in so far as it leaves indelible cicatrices, and is an indication that the general health is much deteriorated.

Ecthymatous pustules and crusts are apt to appear in non-syphilitic subjects, especially in those whose health is deteriorated by bad diet. intemperance, &c., and who are uncleanly, or who are affected by scabies or other itchy eruptions, and may be mistaken for syphilitic ecthyma. The following points are of service in the diagnosis :—

Ecthyma cachecticum.	**Ecthyma syphiliticum.**
1. Commonest on lower extremities and hips—never on face.	1. May affect any part, and not uncommon on face.
2. Ulcers not so prominent a feature, and their character depends on the general state of patient.	2. Ulceration characteristic of syphilis (see p. 646).
3. Surrounded by a reddish areola.	3. Surrounded by a coppery areola.
4. The crusts brownish and rarely rupiform.	4. The crusts greenish or blackish, thick, rough, very adherent, and often rupiform.
5. Cicatrices present no special features.	5. Cicatrices coppery, or white with sharp coppery edges.
6. Occurs in broken-down subjects, or in those affected with some itchy eruption, such as scabies.	6. Occurs in persons tainted with syphilis, and usually the subjects of other syphilitic manifestations.
7. Heals readily under simple local treatment and attention to the general health.	7. Cured by anti-syphilitic remedies.

Sometimes a pustular syphilide resembles patches of *Scrofuloderma*, but the latter occurs in strumous subjects, who may present other unmistakable symptoms of scrofula; the patches, too, are violet or vinous in tint,* with a tendency often at parts to warty formation;

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* It must be noted that, in strumous subjects, syphilitic eruptions may have some of the strumous characters—*e.g.*, violet tint of skin—mingled with those of syphilis, and this is a fruitful source of errors of diagnosis.

the ulcers are irregular with undermined edges, and have a tendency to throw out profuse granulations. The cicatrices, too, are sometimes characteristic, there being a great tendency to the throwing out of little tongues of cuticle, sessile or pedunculated, or to the development of bridles of skin, under which a probe can often be passed. The disease is unaffected by anti-syphilitic treatment, but responds slowly to the use of anti-strumous remedies and caustics.

Rupia syphilitica must not be mistaken for that form of psoriasis which I have described under the name of psoriasis rupioides,* the only resemblance being in the shape of the crusts, which, however, are whitish, and composed of epithelium, and not of dessicated secretion; and on their removal a red, and perhaps bleeding, surface is exposed to view, while there is no trace of ulceration. The other characters of ordinary psoriasis are also usually well marked (see chapter on Psoriasis).

II.—TERTIARY ERUPTIONS (LATE MANIFESTATIONS OF SYPHILIS).

Two of these have already been described—viz., rupia syphilitica along with the pustular syphilides, and one variety of the so-called psoriasis syphilitica along with the squamous syphilides. There only remains, therefore, for consideration, the *Tubercular Syphilides*, from which group we exclude condylomata and the "syphilide papuleuse plate," which are among the earliest of the syphilitic eruptions, and have already been described. With these exceptions, the tubercular syphilide is invariably a late manifestation, tending to make its appearance from two up to twenty or even thirty years after infection. The tubercles vary in size from that of a split-pea to a hazel-nut or even more, are flat or conical in shape, firm to the touch, often smooth and glistening in appearance, at first brownish-red in colour, later coppery.

There are non-ulcerating and ulcerating varieties. In the former the tubercles generally appear in groups, often forming roundish patches: these may be scattered over the body, but are oftenest met with on the face (especially the brow, alæ nasi, and lips), neck, and shoulders. There is usually a tendency to gradual subsidence of the tubercles in the centre of the patches, with the development of new ones at their edges, so that circles or segments of circles of eruption are left, in which, perhaps, the tubercular elements are difficult of recognition owing to the coalescence of neighbouring tubercles, and occasionally segments of circles of eruption near one another unite, forming wavy or serpentine lines, which are very peculiar and characteristic. On the disappearance of the patches there may be some cicatricial appearance left, although there has been no previous ulceration, but this feature is not nearly so marked as it is in the case of strumous affections.

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* See chapter on "Psoriasis" and illustration forming frontispiece.

The ulcerating forms are more serious, and two varieties of them are described, according as the ulcers tend to penetrate deeply or to spread superficially.

(*a*) *The Perforating Tubercular Syphilide* may attack any part, but has a preference for the mouth and face, particularly the nose. An isolated tubercle of large size is the usual initial lesion; this ulcerates, and the ulcer becomes covered with a thick, rough, adherent, greenish or blackish crust. On its removal the ulcer is found to be deep, more or less rounded, with perpendicular, indurated, coppery edges, and ash-grey base. During the advancing stages the crust is soon replaced, and beneath it the ulceration continues to spread; new tubercles, too, are apt to form in the neighbourhood, which likewise ulcerate and unite with the ulcer first formed, and in this way great destruction of tissue may ensue. Thus the lip or palate may be perforated, the alæ nasi destroyed, and even the bones of the nose, &c., involved, and, when healing at last takes place, deep indelible cicatrices result. Often there is a succession of these perforating tubercles on different parts of the body, which may be seen in various stages of development, and which produce much disfigurement.

(*b*) *The Serpiginous Tubercular Syphilide* may attack any part, but is oftenest encountered on the back. It often commences by the development of groups of tubercles as in the non-ulcerating variety, but, owing to the intensity of the virus or to deterioration of the general health, these are soon attacked by ulceration. The ulcers present similar characters to those of the last variety, with this exception, that instead of penetrating deeply they spread superficially and circumferentially, forming circles or segments of circles of ulceration more or less covered with crusts. It occasionally happens that, by the union of neighbouring segments of circles, serpentine lines of ulceration are developed, which are very characteristic (Serpiginous syphilitic ulceration), and, if there should be a succession of these, great disfigurement and extensive scarring of the skin results.

When tubercles constitute a prominent feature in acne (Acne indurata) they may be mistaken for the tubercles of syphilis; but in the former the eruption generally makes its appearance between puberty and five-and-twenty; it has a special tendency to appear upon the face and back, and, with the exception of the top of the chest in front, is rarely met with at other parts. The tubercles, too, are generally marked with a black spot on their summit (the gaping orifice of the sebaceous follicle, blocked up with hardened, blackened, sebaceous matter); and, although they suppurate in an indolent manner, ulceration is not observed. They are often of a dusky-red tint, but never distinctly coppery, nor are they arranged in circles or segments of circles; and, finally, there is an absence of any history of syphilis, or of concomitant syphilitic manifestations.

The following points serve to distinguish lupus, which is erroneously described as a tubercular eruption, from a tubercular syphilide :—

Lupus.	**Tubercular Syphilide.**
1. Generally involves the nose or cheeks, although the limbs are also frequently involved.	1. Any part of the body may be involved, though oftenest the face and shoulders.
2. Consistence of eruption, which is not tubercular, is soft and easily penetrated by solid caustic.	2. Consistence of tubercles is firm.
3. Colour violet or vinous.	3. Liver-coloured or coppery.
4. Ulcers irregular, perhaps undermined, and tendency to throw out profuse granulations.	4. Ulcers have perpendicular edges and ash-grey bases.
5. The crusts brownish or yellowish.	5. The crusts greenish or blackish, thick, rough, and adherent.
6. Commences usually between fifteen and twenty-five.	6. Appears later in life, as a rule, because syphilis is usually acquired in adult life, and eruption often appears many years afterwards.
7. Often of long duration, even many years.	7. A chronic affection, but not to compare in chronicity with the other.
8. Often other signs of scrofula —*e.g.*, glandular enlargements, strumous ophthalmia, disease of the bones, &c.	8. No signs of scrofula unless as a coincidence, but history of infection, and other signs of syphilis detected.
9. Cured by anti-strumous remedies and caustics.	9. Cured by mercury and iodine.

(For the diagnosis of the Tubercular Syphilide from true Tubercular Leprosy, see the latter disease.)

An account of the late cutaneous manifestations of syphilis would be incomplete were we to omit to notice the *Gummatous Syphilide*

(Tumores gummati), although it is only exceptionally met with, and is a late tertiary symptom. It consists in the development of little gummy tumours in the subcutaneous cellular tissue, exactly of the same nature as those occasionally met with in the tongue, brain, lungs, heart, and liver of syphilitic subjects. They are most frequently met with in the subcutaneous tissue of the extremities, varying in size from that of a pea to a marble, and are rarely numerous. At first they roll freely underneath the finger, and the skin covering them has a natural appearance, but sooner or later, if they do not disperse, slow inflammatory action is set up, they become adherent to the skin, which becomes of a dusky-red tint, and fluctuation is detected. When the abscess is opened or gives way, there is a discharge of unhealthy pus, and deep ulcers, which are broadest at their base in the cellular tissue, and with indurated coppery edges, are left, which, when they heal, leave indelible, often depressed, cicatrices.

(*b.*) **Hereditary Syphilis.**

The terms hereditary and infantile syphilis are not synonymous, though often used as such, for, although the latter is generally the consequence of an hereditary taint it *may* be acquired, as, for example, from infection from the secretions emanating from syphilitic sores in the vagina of the mother during delivery, or from syphilitic sores on the nipple of the nurse. And, besides, hereditary syphilis, unfortunately, is not limited to the infantile period. The more recent the taint in the parent, the more likely is the offspring to suffer, and all the more certainly if both father and mother are affected; but, if only one be tainted, the child is more likely to be attacked if it is the mother who is diseased. If a parent exhibits symptoms of syphilis at the time of conception of the child, it is not necessarily tainted; and, on the other hand, it may suffer, even though the parents present no trace of syphilis at that period. If the virus in the parent is very active, abortion or miscarriage generally occurs; and so true is this, that, if a woman has a series of miscarriages without obvious cause, syphilis may be suspected to be at the root of it. If delivery takes place at the full term, the infant may be born with distinct evidences of syphilitic contamination, and with the cachexia and wasting indicative of virulent blood-poisoning: it is like a little old man, or, as Doublet has remarked, it looks the "miniature of decrepitude."

I. EARLY MANIFESTATIONS OF HEREDITARY SYPHILIS.

Generally at the time of birth the child looks perfectly healthy, and only shows evidences of syphilis when it is from one to two months old. It then begins to be peevish and fretful, loses flesh and strength, and its complexion is apt to assume a dirty earthy appearance. The first distinct evidence of disease is often an attack of coryza, the secretions from the nostrils being thin and watery at the outset, but soon viscid and tenacious, and the nostrils become so much obstructed, that often it has great difficulty in taking the breast. A peculiar snuffling noise, too, is usually heard on inspiration, especially when the child cries: hence the term, "the snuffles, sometimes applied to this affection. About the same time the larynx may be the seat of syphilitic erythema, leading to hoarseness, or there may even be aphonia, especially if the vocal cords are the seat of mucous patches. The latter, too, generally appear, as in adults, on the lips, gums, and mucous membrane of the lips, and may be mistaken for patches of aphthæ, which, however, are usually situated on an inflamed base with a red areola, and occur commonly along with well-marked digestive derangement. If there is still doubt as to their nature, a microscopic examination usually demonstrates, in the case of aphthæ, the presence of the oïdium albicans.

Along with the mucous patches in the mouth, condylomata often make their appearance on other parts of the body, in the same situations as, and presenting similar characters to, those observed in adults; and they may exist, especially at the anus, long after the other manifestations have disappeared. Or they may be replaced or accompanied by one or more of the other syphilitic eruptions already described as occurring in adults; but in the majority of cases the eruption is of an erythematous character. This eruption may occur in roundish or oval patches of varying size, which may coalesce, and thus involve a large extent of surface. The affected parts have a dusky-red, yellowish-red, or coppery tint, are not much elevated, have a smooth and glistening appearance in certain lights, and here and there the skin may be seen peeling off in thin dry flakes. This eruption, like the corresponding one in the adult, is altogether devoid of itching, and, while any part may be attacked, it has a special affinity for the buttocks and thighs, the vicinity of the mouth, and the palms and soles. Occasionally at parts excoriations are observed, or even ulcers, which, however, are generally superficial, and do not usually present the typical features of syphilitic ulceration.

The following characters enable us to distinguish simple from syphilitic erythema:—

Erythema.	**Erythema syphiliticum.**
1. Has no *special* tendency to occur a few weeks after birth.	1. Usually occurs from a month to six weeks after birth.
2. Child pretty healthy, as a rule, and no other symptom present unless digestive derangement.	2. Child generally more or less emaciated and cachectic, especially as disease advances, and usually other signs of syphilis, as mucous patches in, or at the angles of, the mouth, condylomata at anus, snuffles, &c.
3. Colour of the eruption bright red or pink.	3. Dusky-red, yellowish-red, or coppery.
4. More or less itchy.	4. No itching present.
5. The surface not usually glazed and shining.	5. Surface often glazed and shining.
6. May attack any part, but flexures of elbows and knees, head, and where apposed surfaces of skin in contact, most frequently affected.	6. Buttocks, face, palms, and soles, the seats of predilection.
7. Health of parents presents no special feature.	7. History of syphilis in parents, or of miscarriages.

One other form of eruption remains to be considered—viz., the

Bullous Syphilide (*Pemphigus neonatorum*).

This is a rare affection, and it falls to the lot of few to observe it. It differs from the other cutaneous manifestations of syphilis, not only in its characters, but also in the date of its appearance, for it generally manifests itself within a week of birth, or the infant may even be born with the eruption upon it. It may involve any part, but has a special affinity for the limbs, especially the palms and soles. The bullæ are usually of small size, and appear in successive crops; some of them are tense, some flaccid, and are filled with serum or sanious pus: this gradually dries up into crusts, beneath which ulcers may form, which usually, however, are superficial. It may occur as an isolated manifestation, but sometimes other symptoms of syphilis are present. Some say that it is not a syphilitic lesion, principally because it sets in at an earlier period than the other manifestations of syphilis are usually observed, and because there is no corresponding disease in the acquired syphilis of adults. The latter statement, as we have seen, is incorrect, while the former is inconclusive, seeing that different lesions of syphilis, for reasons unknown to us, appear at different times, while proof of its syphilitic origin is found in its frequent co-existence with other characteristic syphilitic symptoms, in its usually occurring in the children of syphilitic parents, and in the fact that anti-syphilitic treatment is the only one that seems to have any control over it. Unfortunately, in the great majority of cases, the general health rapidly deteriorates, the child wastes away, and usually sinks within a week or two.

II. LATE MANIFESTATIONS OF HEREDITARY SYPHILIS.

(*Syphilis héréditaire tardive.*)

These are not unfrequently met with, especially between the ages of ten and nineteen. They are generally tubercular or gummous in character, and resemble those of the corresponding late manifestations of acquired syphilis. They are most commonly observed on the face and leg. In the former situation the nose is the part usually attacked, and the disease is very generally mistaken for lupus, the difficulty of diagnosis being often very great. In addition to the characters already described (see late manifestations of acquired syphilis), we may be aided in our diagnosis by a history of syphilis in the parents, or of syphilitic manifestations in the infantile period, or in other members of the family. The disease is more rapidly destructive than is usual in lupus, and the palate is much more frequently implicated. Nodes on the bones, especially on the humerus and tibia, are common accompaniments. We also look for evidence of deafness, which is symmetrical, and the result of disease of the auditory nerves, or of their ramifications in the labyrinth, for interstitial keratitis or the remains of it, and for alterations in the teeth as pointed out by Hutchinson. It is the central upper incisors of the second set which are the test teeth. These are usually short and narrow, with their corners rounded off, and a vertical notch on their free edges. The face, too, is often characteristic, the brow being prominent, and the bridge of the nose broad and sunken, while there is a dirty earthy pallor of the skin, and cicatrices are commonly observed, especially radiating scars, at the angles of the mouth.

Treatment—1. *Constitutional.*—Apart altogether from the special treatment of the syphilitic taint, it should be our aim to maintain the general health at as high a standard as possible, and any functional derangement of internal organs, or any inherent delicacy of constitution, must be dealt with in the usual way. The diet should be generous but plain, and stimulants strictly forbidden, unless to fulfil some special indication. The more the patient is in the open air the better, but overwork, whether mental or bodily, should be avoided. In fact, we should endeavour to put our patient in as favourable a condition as possible to enable him to triumph over his disease, it being well known that the worst cases of syphilis are met with in broken-down and scrofulous subjects. But, at the same time, it is right to add that I am not an adherent of that eccentric school which holds that the whole treatment of syphilis is summed up in the use of tonics, and in attention to the general health, to diet, and to hygiene. On the contrary, I am a firm believer in the virtues of mercury, and, in some cases, of iodine. Quite recently, the compound fluid extract of bamboo brier (each pint representing $\frac{1}{4}$ lb. bamboo brier root, $\frac{1}{4}$ lb. Stillingia, $\frac{1}{4}$ lb. burdock root, $\frac{1}{4}$ lb. poke root, and 1 ounce prickly ash bark), in doses of ʒi–iv thrice daily before meals, has been highly extolled by Dr. M‘Dade. "The formula," we are told, "is one which, in a crude form, has been employed for many years with great success in the plantations in Alabama." As a teacher of medicine, I considered it my duty to give this combination a fair trial. This I did under most favourable circumstances for testing its efficacy, making use of the preparation manufactured by Messrs. Parke, Davis & Co., of Detroit, but I am bound to say that it has proved a failure in my hands, and I have therefore fallen back upon our old friends mercury and iodine.

Of these *mercury* is by far the more important, and the remedy to be relied upon chiefly, not only in the early, but also in the late, stages of syphilis; indeed, the most brilliant results which I have witnessed have been in connection with the late manifestations, and after failure with large doses of iodide of potassium. But while mercury undoubtedly hastens the removal of existing manifestations, there is much difference of opinion as to whether it destroys the virus, or renders it in the long run less virulent. My own opinion is that it counteracts it to a certain extent, and renders later manifestations less certain and less severe, if given appropriately. But, even if it did not, is it not very important to be able to subdue symptoms—to cure iritis and retinitis, and thus to save the eyesight of its victims; to check an ulceration which may be producing the most distressing sore throat, eating through the palate, injuring the vocal cords, or leading to extensive destruction of the skin; to prevent the falling of the hair, which, even though it be but temporary, attracts the attention of the patient's friends, and alarms the sufferer himself? And, be it observed, the use of mercury, if properly administered, in no way injures the health of the patient. On the contrary—and this is far and away the most powerful argument in its favour—patients generally gain in weight while under it, and they have informed me over and over again that they feel much better in health and in spirits while taking it, the drug having for the time at least checkmated the virus, and removed the depression which it produced. Let others say what they please, I for one fully appreciate the blessings which mercury confers upon the victims of the syphilitic poison, and would feel very much at sea in the treatment of syphilis were it placed beyond my reach. At the same time, we must never forget that syphilis is capable of spontaneous cure, and therefore all that we should attempt to do is to aid the efforts of nature by this and other means.

There is a great variety of modes of administering it, but, on the whole, that for which, as a rule, I have a decided preference is *inunction*, as we thus avoid derangement of the digestive organs. For this purpose the ung. hydrargyri B.P. is generally used, or Shoemaker's 50 per cent. *mercurous* oleate ointment.* The only objection to these preparations is their dirtiness, but in the case of the latter ointment the difficulty has been overcome by making it without using heat. In this way, we obtain an ointment which has a faint lavender tint, but it should be freshly prepared, as it soon begins to change colour.† About a drachm of the ointment is rubbed into the tender skin (such as the inside of the thigh) once or twice a day, the patient being warned to change the site of the inunction if the skin become itchy, tender, or inflamed; and to omit it, if the gums become decidedly affected, till they recover. The treatment should generally be continued for many months after all symptoms have disappeared; indeed, there is a pretty general consensus of opinion that a course of treatment extending over at least two years is required in order to get the full benefit of the drug, and to minimise the chances of a relapse. Of course, it is necessary during all this time that he should be under the observation of his medical adviser. In order to prevent salivation, or to check it if it occurs, a mouth-wash containing 15 to 20 grains of chlorate of potash in the ounce may be used, or, as Velpeau suggested, the patient may rub his gums three or four times a day with powdered alum; but those who keep their teeth and gums scrupulously clean are little liable to this complication, if the treatment is conducted with ordinary prudence.

The *mercurial vapour bath* is a mild and often very useful way of administering mercury, especially when the cutaneous manifestations are very pronounced, and where there is ulceration; but before it is employed the crusts must be removed, and the sores thoroughly cleansed, because its virtue lies in its local as well as in its constitutional influence. From $\frac{1}{2}$ to 1 drachm of calomel should be used for each bath, and it is generally advisable only to employ it every second day. When the ordinary vapour bath cannot be obtained, the simple apparatus made by Messrs. Whicker & Blaise * may be used; or a little boiling water may be put in a pot; a common brick, heated to a low red heat in the fire, is then placed in the water, and the calomel is sprinkled on its upper surface, which is above the level of the water, the patient being enveloped loosely in a blanket. The hot brick keeps the water boiling and volatilises the medicine.

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* The mercuric oleate must not be used, as it has an almost purely local action.

† Prepared for me by Mr. Lawrence, manager, Messrs. Frazer & Green, 469 Sauchiehall Street, Glasgow.

The *subcutaneous injection* of the perchloride of mercury is a very valuable method of treatment in some cases, especially when we have our patients constantly under observation, as when they are in hospital; the principal objection to it being that the irritation of the injection may lead to the formation of painful indurations, or even to abscesses, in the subcutaneous cellular tissue. Various mixtures have been devised with the view of overcoming this obstacle, but none of those which I have tried possess any marked superiority over a simple solution of 4 grains in 1 ounce of distilled water, of which 15 to 30 minims (gr. $\frac{1}{8}$ to gr. $\frac{1}{4}$) may be injected daily. With the view of preventing the occurrence of inflammatory reaction, the following procedure, in whole or in part, may be adopted:—The skin is first frozen with ether spray, or, better still, with a small smooth piece of ice, the surface of which is sprinkled with salt, and applied with the aid of a folded handkerchief. One-eighth of a grain of sulphate of morphia (dissolved in 5 minims of distilled water) is then injected deeply into the cellular tissue of the hip, or other part which is insensitive, or where there is much subcutaneous fat; the syringe is then detached from the canula, and filled with the sublimate solution, and in two or three minutes it is again attached to the canula, and the solution is injected. Thereafter a lump of ice is kept applied to the part until all uneasiness has subsided. In this way, if a clean sharp canula is used, no bad effect is likely to follow. The rapidity with which syphilitic manifestations sometimes disappear, as well as the small quantity which requires to be used as compared with the internal administration of the drug, is well shown by the following case, which also illustrates a point already referred to—namely, the efficacy of mercury in the latest stages of syphilis:—

A billposter, aged 46, was admitted into the Western Infirmary of

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* 67 St. James Street, London. The price is 10s. 6d.

Glasgow on May 2, 1876, complaining of headache and pain in the shoulders, ulceration of the mouth and tongue, hoarseness, and eruptions on the body.

Twenty-three years previous to admission he contracted a chancre on the penis. During the following two or three years an eruption was at times visible on his body; but this ultimately disappeared, leaving him in tolerably good health, with the exception of a headache, which then began to trouble him occasionally. The headache, which was at first not very troublesome, became year by year more severe in character, and more frequent in its occurrence. On admission the pain was confined chiefly to the left side of the head; and, in addition to the hemicrania, there were experienced pains in the shoulders. These pains had been present for seven years, and nocturnal exacerbation was a marked feature of them. The hoarseness and affection of the tongue and mouth began about a year previous to admission.

On examination an indurated mass was found on the left side of the tongue, with abrupt and elevated margins, and near this an excavated ulcer. An ulcer with a raised edge was seen at the left angle of the mouth, on the mucous surface, and a smaller one on the left anterior pillar of the fauces. The inguinal glands were found to be enlarged, but the other superficial glands were unaffected.

Maculæ were seen on several parts of the body, as well as an eruption of small rounded erythematous spots, which were not itchy. There were some bald patches on the head, and the remaining hairs could be pulled out very easily.

Treatment was commenced on the 4th May. One-sixth of a grain of perchloride of mercury and $\frac{1}{6}$ of a grain of muriate of morphia were prescribed for subcutaneous injection, and the dose was repeated daily. These injections were continued until the 14th May, when it was found necessary to intermit them on account of soreness of the gums. Even at this early period in the treatment, when only eleven injections, or nearly 2 grains of the perchloride, had been administered, a considerable improvement had taken place in the condition of the ulcers. On the 24th of the month the injections were resumed. Fourteen more had been given, when they were again stopped, on account of the recurrence of the soreness of the gums, and also because of the absence of any indications for their continuance. The pains complained of had completely disappeared, the voice had improved, the eruption was gone, the ulcers were healed, and the tongue was restored to its normal appearance. The total quantity of perchloride of mercury used was $4\frac{1}{6}$ grains.

The *internal administration of the perchloride of mercury* is perhaps the most generally employed treatment for syphilis, a couple of formulæ for which are appended;* but there can be no doubt that its efficacy is incomparably inferior to that of the methods already mentioned, as well as to the old orthodox calomel and opium pill, which is really a very efficient remedy, although it is apt to derange the stomach. This is well illustrated by the following extract from a letter received from a medical man who consulted me in 1870 on account of an obstinate attack of syphilitic psoriasis palmaris, which had resisted all previous treatment, but yielded speedily to calomel and opium pills (℞ calomelanos, gr. xij; extr. opii, gr. iij; conserv. rosæ, q.s. Divide in pil. xij. One thrice daily after food). "I am extremely obliged to you," he wrote, "for the excellent advice you gave me for my psoriasis palmaris. About the sixth day of the treatment, the disease showed a marked improvement, and in two weeks it was completely cured; and now three weeks after the commencement of the treatment, fresh cuticle has been supplied, and so closely resembles the original epidermis that the marks are scarcely perceptible, and will doubtless in a short time be obliterated.

"My general health, too, has been greatly improved under the treatment, the cachexia, which existed, having been succeeded by an improved 'tone.'

"I write, therefore, to thank you heartily for the advice which has resulted in so great a boon."

Other preparations of mercury, such as bluepill, the protoiodide and bicyanide of mercury, Zittmann's decoction, and grey powder may also be used with advantage, and it will be found that each practitioner has his own favourite remedy and mode of administration. Some recommend the application of emplastrum hydrargyri, and Quinquand is in favour of the empl. calomelanos,† but the consitutional effects are slight, although they prove of much service as local applications. I conclude with the following aphorisms with regard to the mercurial treatment of syphilis :—

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* ℞ Hydrargyri perchloridi, ... gr. iij.
Syr. pruni Virginianæ,
Tinct. gentianæ co., āā, ... ℥iij. —*Solve.*
Sig., A measured teaspoonful twice or thrice daily in water after food.
℞ Hydrargyri perchloridi, ... gr. iss.
Extract. cinchonæ, ... ʒss. —*M.*
Divide in pil. xii.
Sig., One twice or thrice a day after food.
Or, Schieffelin's perchloride of mercury pills ($\frac{1}{12}$ gr.) may be employed.

† ℞ Calomelanos, ... ℥iiss.
Olei Ricini, ... ʒss.
Empl. Plumbi, ... ℥viiss. —*M.*
To be spread upon linen. A square of 2½″ contains gr. xviij. of calomel.

1. Mercury does not prevent, although it may retard, the occurrence of constitutional symptoms, and, therefore, should only be given on the appearance of secondary manifestations.

2. The duration of a course of mercury, though partly dependent upon the preparation used, and the way in which it is administered, must be chiefly regulated by the rapidity with which it dissipates the syphilitic manifestations for which it is given.

3. Mercury should never be pushed to extreme salivation in any case, though, if necessary for the removal of symptoms, the gums may be kept gently touched for some weeks.

4. Under these circumstances the patient should, if possible, be confined to the house, particularly in cold weather, and during the prevalence of east winds.

5. Tertiary symptoms are generally fully as much under the influence of mercury as the earlier manifestations.

6. In markedly strumous, debilitated, or broken-down subjects, mercury, if given at all, should be administered in a mild form (*e.g.*, the mercurial vapour bath), and its effects carefully watched. Even in some of these cases its value is very great.

7. The more delicate the organ attacked, and the more rapidly the poison commits its ravages, the more quickly, *cæteris paribas*, must the system be brought under its influence.

Iodide of potassium, so commonly prescribed, is, in my opinion, comparatively useless for the removal of the *secondary* cutaneous manifestations of syphilis, although it sometimes relieves the pain of periostitis, but the symptoms of *tertiary* syphilis often disappear with great rapidity under its influence. As already stated, however, I do not admit the universal superiority of iodide of potassium over mercury in the late stages of the disease, for undoubtedly the latter sometimes removes symptoms after the former has failed, and is more permanent in its effects. Iodide of potassium is best given, as a rule, simply dissolved in water (or, if there is anæmia, in combination with arsenic or with 5 to 10 grains of tartarated iron), and on an empty stomach if it is well tolerated. The initial dose for an adult is 10 grains thrice daily, but much larger doses, even ʒij or more, may sometimes be prescribed with advantage. The following aphorisms sum up my experience of the use of the iodide of potassium :—

1. It should be continued until the manifestations for which it is given yield, unless it produces distressing symptoms of iodism, or fairly upsets the stomach. Even then it should only be omitted for a few days.

2. The longer the interval which has elapsed since the contraction of the disease, the more wonderfully, as a rule, does it act.

3. Painful syphilitic affections are usually speedily alleviated by iodide of potassium.

4. In cases where the patient cannot or will not take mercury, or where the state of the general health contra-indicates its use, iodide of potassium may be given freely and often with advantage except in the earliest stages of the disease.

5. Syphilitic manifestations are much more apt to relapse, and much more quickly, after a course of iodide of potassium than after a course of mercury.

6. While the iodides in medicinal doses are perfectly safe, the iodates are poisonous. We must, therefore, not only avoid giving them, but also combinations which in the system result in the formation of iodates (*e.g.*, iodide of potassium and chlorate of potash).

The *iodide of starch*, introduced by the late Professor Andrew Buchanan, is often a good substitute for the iodide of potassium in doses of ʒi to ℥iv in water, or water gruel, thrice daily. It should be freshly prepared (no spirit being used in making it as is so often done *) and kept in a dark place and in a well-stoppered bottle.

In obstinate cases, a course of mineral waters and baths (such as those of Aix-la-Chapelle, Baréges, Enghien, and, in scrofulous patients, Kreuznach), in combination with the use of anti-syphilitic remedies, is often of service, for, by augmenting remarkably the secretions of the skin and kidneys, they increase the rapidity of the metamorphosis of the tissues, while, at the same time, they cause the rapid elimination of the anti-syphilitic medicine, thus permitting of its long-continued use, if necessary, without impairing, but, on the contrary, rather augmenting, its action. It must be added, however, that very similar results may be obtained at home by the use of artificial sulphur (℥iv sulphuret of potassium in each bath), plain hot water, and hot air baths, increasing, as they do, the elimination of the mercury through the medium of the skin.

It is unnecessary to do more than mention the treatment of syphilis by means of syphilisation, which has never been, and, I trust, never will be, acclimatised in this country—the remedy being, in my opinion, worse than the disease.

In the constitutional treatment of *Infantile Syphilis*, if the mother is syphilitic and is nursing her child, the best plan is to treat the mother in the usual way, the child imbibing with its mother's milk at once nourishment for its body and an antidote for the poison. Or the mercurial vapour bath may be employed, or warm baths daily, to each of which 10 grains of the perchloride of mercury, dissolved in 1 drachm of spirit, are added. Or a very good plan is to rub a piece of mercurial ointment, about the size of a pea, into the sole of the foot once a day, or to put a narrow band of flannel round the child's body, on the inside of which a piece of mercurous oleate ointment, the size of a bean, is rubbed daily.

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* *The Extra Pharmacopœia of Unofficial Drugs.* By W. Martindale. London: H. K. Lewis, 1892, p. 249.

The treatment of *Hereditary Syphilis in the adult* must be carried out on the same lines as that of acquired syphilis, but mercury must be used cautiously (*e.g.*, in the shape of Donovan's solution); and iodine in some shape or other, in combination with tonics and supporting measures, often constitutes the best treatment.

Local treatment is quite subordinate to constitutional, as a rule, although it is frequently of service. This is especially true of *Condylomata.* If large they may be excised or ligatured, or they may be painted from time to time with acid nitrate of mercury or with chromic acid (one part dissolved in three of water). In slight cases, it is often sufficient to keep the parts clean and dry, and separated by means of pieces of lint. Or we may adopt Ricord's plan of washing the parts twice daily with liquor sodæ chloratæ, then drying them, dusting them with calomel, and keeping them separate with lint. When condylomata (mucous patches) are present in the mouth or throat, smoking and all other sources of local irration should be avoided, and the parts may be painted daily with a solution of nitrate of silver gr. iij to ℥i), or seldomer if a stronger solution, or the solid caustic is used. Astringents and anti-syphilitic gargles and mouth washes are also of service, a formula for one of which is appended.[*]

When *Alopecia* is a prominent feature, shaving the head is quite unnecessary and generally undesirable, but the remaining hair may be kept as short as possible, without attracting attention, and a lotion of carbolic acid, liquor carbonis detergens, or perchloride of mercury,[†] may be used with advantage.

Most of the earlier of the cutaneous lesions require no local treatment whatever, but tubercular and ulcerating manifestations are often

[*]

℞ Hydrargyri bicyanidi, ...	gr. vi.	
Mellis rosæ, ...	ʒi.	
Infusi rosæ acidi, ...	℥ij.	
Aquam ad.	℥vi.	—*M.*

[†]

℞ Liq. carbonis deterg., ...	ʒi.	
Aquæ destillatæ, ...	℥vi.	—*M.*

℞ Hydrargyri perchloridi, ...	gr. xij.	
"Eau de Cologne,"	℥i.	
Glycerini, ...	ʒvi.	
Aquæ dest., ...	℥iv.	—*Solve.*

benefited thereby. An ointment of calomel* is very useful in dissipating the former, as well as the red ointment of Startin.† In cases of syphilitic ulceration of the skin, the crusts should be removed and the sores thoroughly cleansed, after which the mercurial vapour bath already referred to is highly to be commended. The parts may also be bathed from time to time with black or yellow wash, or with a lotion of perchloride of mercury (2 grains to 1 ounce), and afterwards dressed with pieces of lint soaked in the same; or they may be smeared with one of the above ointments. A very good plan in some cases is to strap the sores with empl. ammoniaci cum hydrargyro, or we may treat the sores locally, without resorting to mercurial preparations, in accordance with their temporary pathological condition (see treatment of ulcers), while using anti-syphilitic remedies constitutionally.

C. STRUMOUS AFFECTIONS OF THE SKIN.

These affections are unfortunately too commonly met with. Among 2,000 private cases they were encountered 94 times, and 2,657 times among 38,054 hospital cases.

These have certain characters in common, to which it may be well in the first place for a few moments to allude.

1. They are very chronic, and in most cases the disease for which we are consulted is found to have lasted for months and even for many years.

2. The eruption has a great tendency to assume a dusky-red, violet, or vinous tint, thus contrasting with the bright-red colour of most simple inflammations, and the coppery hue of chronic syphilitic affections.

3. In most affections of the skin, itching, or pain, or burning heat, or some disagreeable sensation is complained of, at times at least, whereas the majority of strumous affections are remarkable for the absence of pain and itching.

4. The eruption is usually more or less rounded; at all events it is apt to spread in circles or segments of circles, the edge being elevated as long as the disease is spreading.

5. If ulceration occurs—to which there is a great tendency—the characters of the ulcers are often very typical: the skin around them

* ℞ Calomelanos,
Glycerini, āā, ... ʒi.
Ungti. petrolei, ... ℥i. —*M.*

‡ ℞ Hydrargyri bisulphureti,
,, oxidi rubri, āā, . . . gr. vi.
Creasoti, ... ♏ij.
Unguenti simplicis, ... ℥i. —*M.*

has a dusky-red or violet tint; their edges are often undermined, and they have a tendency to throw out profuse granulations.

6. Even when there has been no preceding ulceration, a cicatricial appearance of the skin is almost invariably left, the surface being generally depressed and often parchment-like; and, when there has been ulceration, the cicatrices are sometimes very characteristic, owing no doubt, to the peculiar character of the ulceration as above described. Little tongue-like processes of skin often project from the surface, or bridles of skin are left, underneath which a probe can often be passed.

7. If we except lichen scrofulosorum, which is usually limited to the trunk of the body, the part which is most generally attacked is the face, and next to this, though at a long interval, the extremities and the hips.

8. The eruption is usually circumscribed, and, although a good many scattered patches may sometimes be observed, the whole extent of skin invaded is rarely great; and such a thing as a strumous affection involving the greater part of the cutaneous envelope is never seen.

9. These affections have a special tendency to attack the young, either in childhood, or about the period of puberty, or, at all events, usually before the age of twenty-five, although they may persist obstinately for many years thereafter. An exception to this rule is, however, to be found in lupus erythematodes (afterwards to be described), which often sets in in middle life.

10. Lastly, in a considerable proportion of cases, other strumous affections (manifestations of the strumous diathesis), such as caries, necrosis, strumous affections of the glands (especially of the sides of the neck), or of the eyes, coincide with the affection of the skin.

Most of the forms of strumous affection of the skin met with in practice may be classed under one or other of the following heads, viz. :—

1. Lupus vulgaris $\begin{cases}\text{non-exedens.}\\ \text{exedens.}\end{cases}$
2. Lupus erythematodes.
3. Lichen scrofulosorum.
4. Scrofuloderma—variety, S. verrucosum.

1. LUPUS VULGARIS.

It is now generally admitted that lupus vulgaris is due to the presence of the tubercle bacillus. They are most likely to be found at the edges of the nodules, but they are only scantily present, due, it is said, to the lower temperature of the surface of the body. Owing to the irritation produced by them, a low form of inflammation is set up, resulting in a copious small-celled infiltration of the cutis, interspersed with large epithelioid and giant cells, beginning in its deeper layers, and gradually involving the other structures of the skin. This is followed sooner or later by necrobiotic changes, or the granulation tissue is partly absorbed, and partly converted into connective tissue, so that cicatrices, without previous ulceration, are produced.

This is the most frequent manifestation of the strumous diathesis, as shown by the fact that of 2,000 consecutive private cases of skin disease, there were 94 cases of strumous affection, of which 41 were lupus vulgaris. It is met with in all classes of the community, although the worst cases are usually in those whose diet is bad, and whose hygienic surroundings are wretched: and yet it may appear in persons whose general health *seems* to be excellent: it rarely interferes much with the general health, and in uncomplicated cases is unaccompanied by fever. It is much commoner in females than in males, in the proportion of 19 to 5, and usually begins its ravages between five and twenty-five. Any part of the body may be implicated: the extremities are more frequently invaded than the trunk of the body, but in the great majority of cases its seat is on the face, especially the nose or cheeks; indeed, Devergie's statistics show that of 44 cases the face was attacked in no less than 41.

The disease commences in the deeper layers of the skin, giving rise to little yellowish-brown or "apple-jelly" nodules about the size of a millet seed: these are improperly termed tubercles, because there is usually not much elevation, and their area is not much greater than that of small papules. They are very soft, and can therefore be easily penetrated by means of a pointed stick of caustic, thus contrasting strongly with the firm and resistant healthy tissue around. These nodules gradually increase in number and in size, and sooner or later many of them coalesce, so as to form yellowish-brown or violet patches of variable extent, often glistening on the surface, and covered more or less with scales, but at their edges some isolated nodules are usually to be detected. It occasionally happens that the lupus deposit is so copious as to lead to very considerable elevation, and the surface may then have more or less of a tubercular appearance; this is the lupus hypertrophicus of some authors, but the term is also sometimes used to designate an eruption accompanied by great swelling of the subcutaneous cellular tissue. The patches are usually more or less rounded, and often there is a tendency for the eruption to heal in the centre, and to spread at the edges in elevated circles or segments of circles (L. serpiginosus). In this condition the disease may remain in an indolent state for an indefinite period of time, giving no trouble except for the disfigurement which it produces, and with no tendency to ulceration (L. non-exedens); but, should it disappear in whole or in part, a cicatricial condition of the skin is invariably left, apart altogether from the use of strong local applications, or the occurrence of ulceration.

In a large proportion of cases, however, especially if the general health is much below par, or the surroundings of the patient unfavourable, ulceration, at some parts at least of the eruption, occurs (Lupus exedens), for the lupus deposit is possessed of very feeble vitality. Pustules form here and there—sometimes isolated, more often confluent—which dry into crusts, beneath which the ulcerating process is apt to proceed, and with a great tendency to the development of profuse granulations, so that, on removing the crusts, the surface has a very uneven and rugged aspect, and presents a very different picture from that of the non-ulcerating variety. It occasionally happens that the ulceration, instead of spreading superficially, penetrates deeply, and produces great destruction and deformity (Lupus terebrans—Lupus vorax). In this way the alæ nasi are often destroyed, or the septum of the nose perforated; indeed, in a large number of cases the latter is the first evidence of disease, one which is very apt to be overlooked or neglected, and which may considerably precede the appearance of the eruption on the surface. The disease may also produce caries of the bones of the nose and palate, leading to almost complete destruction of the former and to perforation of the latter. More frequently, however, the ulceration spreads superficially, healing in the centre, and spreading at the circumference in circles or segments of circles (Lupus serpiginosus), and may gradually involve a considerable extent of surface, when it is very apt to be mistaken for a serpiginous syphilitic eruption. As the ulceration extends circumferentially, cicatrisation usually occurs in the centres of the patches, but the cicatrices often become the seat of a fresh deposit of lupus nodules, forming new points of departure. This variety also produces much disfigurement, which may even be aggravated by the healing up of the ulceration, the cicatrices inducing twisting of the mouth, dragging down the lower eyelid (ectropium) and exposing the eyeballs, which may inflame, or interfering with the play of the muscles of the face, or with the movements of the neck. The soft tissues covering the nose and cheeks, too, are very apt to be atrophied, and thus the patient may present a most revolting appearance—a condition which, unfortunately, is too often beyond the surgeon's skill. Occasionally epithelioma develops on old patches of lupus.

The mucous membranes are frequently involved, especially that of the nostrils, gums, soft palate, and pharynx; and Leloir has recently published an interesting case of lupus of the tongue, the tubercle bacillus being found in some of the nodules, which varied in size from a pin-head to a large pea.*

Like other strumous affections, this disease is exceedingly chronic—so much so that I have rarely seen a case which was of less than six months' duration, while it is quite common to be consulted by patients who have suffered from it for ten, fifteen, or twenty years. It is sometimes beneficially influenced by intercurrent affections: this is especially true of erysipelas, which, attacking the affected part, has been known to cure the eruption of which it was a complication. The same result has also been known to follow the outbreak of a constitutional disease, though much more rarely; and Hardy mentions a case of complete cure as the result of an intercurrent severe attack of enteric fever.

There are some who hold that lupus is the offspring of syphilis in the parents, that, in fact, it is one of the late manifestations of hereditary syphilis. This, however, is in no way proved, and is open to grave doubt, although probably persons tainted with syphilis may be more liable to it than those not so affected, because anything which deteriorates the general health favours the development of the strumous diathesis.

The **diagnosis** of lupus vulgaris is usually very easily arrived at: the seat of the eruption (most commonly on the face), the peculiar reddish-brown or violet glistening spots which characterise it, the absence of pain or itching, its very slow progress, the tendency to ulceration, the ulcers usually throwing out very profuse granulations, the occurrence of characteristic cicatrices even without preceding ulceration, and the frequent accompaniment of other signs of the strumous diathesis, are features which, when carefully attended to, serve to distinguish lupus from all other diseases.

The affections most likely to be confounded with it are *Epithelioma* and *Syphilis*. The following tables should serve to distinguish them:—

Lupus vulgaris.†	**Epithelioma.**
1. Commences usually before the age of twenty-five, and often much earlier in life.	1. Occurs usually in persons getting up in years.
2. An indolent, painless affection.	2. Tingling and pain, which may be lancinating in character, common.

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* *International Atlas of Rare Skin Diseases.* I. Leopold Voss. Hamburg and Leipzig, 1889. See Appendix.

† It is right to mention that epithelioma occasionally develops on a patch of lupus.

3. Edges of patches, though often round and elevated, are soft.	3. Edges hard, everted, and often having a glistening translucent appearance.
4. Ulcers in most cases superficial, soft, throwing out profuse granulations, and edges often undermined.	4. Ulcers oftener deep, hard, with uneven, finely granular appearance, and exuding a sticky fluid, which often gives a varnished appearance to the surface.
5. The nose is the part of the face oftenest attacked.	5. The nose is not more frequently involved than other parts of the face.

Lupus vulgaris.	**Late Manifestations of Acquired Syphilis.**
1. Commences early in life, generally before twenty-five.	1. Appears usually after the age of twenty-five.
2. Often a history of hereditary tendency to strumous affections.	2. History of syphilis having been acquired.
3. Oftenest met with on the face.	3. On any part of the body, though often upon the face.
4. Ulceration has tendency to throw out profuse granulations, and edges often undermined.	4. Ulceration as if cut out with a punch, and base ash-grey.
5. Colour of eruption yellowish-red or violet.	5. Colour of eruption in the chronic state usually coppery.
6. Often of many years' duration.	6. Chronic, though not nearly so much so.
7. Cured by the use of caustics and anti-strumous remedies.	7. Cured by mercury or iodine.
8. Often other manifestations of the strumous diathesis.	8. Generally other manifestations of syphilis.

For the **diagnosis** of the late manifestations of hereditary syphilis from lupus the reader is referred to p. 662, while that of lupus erythematodes is given after the description of the latter disease.

Leprosy can only be mistaken for it in its early stage, but it must be borne in mind that there are distinct tubercles in the former, while in lupus little nodules, not larger than a millet-seed (and erroneously termed tubercles) are developed. If any anæsthesia is present, it would point distinctly to leprosy, and so would the history of the patient having been in a leprous district. Most of the points, too, just mentioned, as serving to distinguish lupus from the late manifestations of syphilis, would be of service in the diagnosis.

Eczema is generally more diffused and extensive, the patches are much firmer and more resistant, they are apt to weep, and are usually very itchy. There is no ulceration or scarring, and at the edges there are none of the little isolated nodules seen in lupus.

2. LUPUS ERYTHEMATODES.

Syn.—*Erythema centrifugum* (Biett); *Seborrhœa congestiva* (Hebra); *Lupus erythematosus* (Cazenave).

This form of skin disease, first described by Biett under the name of erythema centrifugum, is now better known under the title of lupus erythematodes. It is connected with lupus vulgaris, not only in name, but also in that it presents these features in common with it, viz.:—That it occurs almost invariably upon the face; that it has usually a dusky-red or violet tint; that it is an exceedingly chronic and obstinate affection; and that it leaves a cicatricial appearance of the skin: but it has not the same tendency as lupus vulgaris to attack very young persons, seldom appearing till some time after puberty, and, as yet, the tubercle bacillus has not been discovered. It is much commoner in females than in males. Of 1,000 consecutive cases of skin disease in private, there were 11 cases, all in females, the age of the patients *when seen* varying between 18 and 54, the average age being 37.

It may set in as a pretty acute affection, or exhibit acute exacerbations in its course, and even be accompanied by fever, especially in that rare form which is extensive and widely diffused over the body, but usually it is exceedingly chronic, and progresses slowly and insidiously. It commences in the form of minute dusky-red spots about the size of lentils, situated at the orifices of the sebaceous follicles, and each covered by a thin, oily, adherent scale, which is depressed in the centre owing to its being attached to a slender plug of epidermis which dips into the dilated sebaceous follicle beneath. These spots gradually increase and often coalesce, so that sometimes a very considerable extent of surface is involved. The edge of each patch is more or less rounded, and in the advancing stage abrupt and elevated, and, as it extends circumferentially, it often heals in the centre, the area presenting a slightly depressed and cicatricial appearance, frequently covered with dry, parchment-like scales. The eruption may be the seat of slight burning or itching, but it is very rarely painful, and is never the seat of ulceration. If the surface is free of scales, it has, in typical cases, a rough and pitted appearance, owing to the gaping orifices of the follicles plugged with hardened sebum-plugs. A patient affected with lupus erythematodes once informed me that, at the seat of the eruption, she felt "as if all the pores of the skin were blocked up." The nose and cheeks are the parts of the face most liable to be involved, and the eruption at times assumes the form of a butterfly with outspread wings, the disease on the nose representing its body, that on the cheeks the wings. The backs of the hands are sometimes implicated as well as the face, and also occasionally other parts, but the ears much more frequently than the hands; the head, too, is often affected in scattered patches, in which case, after the disappearance of the eruption, its previous seat is indicated by permanent alopecia with whiteness and depression of the scalp.

One of the most striking pecularities of lupus erythematodes is the cicatricial thinning of the skin which is left, but it should be known that, when the inflammation is slight and superficial, it may disappear without leaving any traces.

This disease has comparatively little tendency to spontaneous cure; indeed, it often continues for many years, or even during the rest of the lifetime of the patient. Erysipelas is a not uncommon complication, apart altogether from the use of irritating local applications. This is a source of some danger to the patient, but is occasionally followed by the disappearance of the primary disease.

It is an inflammation of the cutis proceeding from the vessels which surround the sebaceous and sweat glands and their follicles, and the hair follicles, and later from those of the papillæ, all of which are thickly beset with inflammatory cells: the nerves in the vicinity of the glandular structures are likewise surrounded by infiltration. At parts the proliferation of epithelial cells is so great as to destroy the line of demarcation between the papillæ and the epidermis, there being, at the same time, an increase in the layers of the horny cells, but accelerating their degeneration, and promoting their fall. Here and there necrosis of the corium ensues, leading to atrophy and scarring.*

Lupus erythematodes may be mistaken for simple erythema, psoriasis, tinea circinata, lupus vulgaris, seborrhœa sicca, and tertiary syphilitic eruptions.

Erythema, though common on the face, is frequently met with on other parts of the body; it has a much brighter tint; its edge is much less abrupt, as a rule, the colour gradually shading into that of the healthy skin; the sebaceous follicles are not involved; it is much more evanescent: and, when it disappears, it leaves no trace behind it.

Psoriasis sometimes resembles lupus erythematodes in the colour and shape of the patches, but it has no special tendency to attack the face

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* See article by Dr. Morison, of Baltimore (*Viertelj. Derm. u. Syph.*, Heft. 4, 1886).

—the elbows, knees, and head being its most common seat; it is much more extensively diffused; the scales are silvery white, imbricated, and less adherent; itching is more frequently present; the patches are much less obstinate, although the disease has a tendency to recur, especially in spring; and no cicatrices are left.

Tinea circinata (Ringworm of the body) often occurs upon other parts than the face; it is a comparatively acute affection; it is non-symmetrical; the sebaceous follicles are not specially involved; there is usually a history of contagion, and the parasite can often be detected among the scales with the microscope; it does not give rise to cicatrices; and it is most commonly met with in children.

The diagnosis of the remaining affections may be best shown in a tabular form.

Lupus erythematodes.	**Lupus vulgaris.**
1. Does not usually appear till some time after puberty.	1. Often appears in childhood, or about the period of puberty.
2. Initial lesion an erythema, which is comparatively superficial.	2. Isolated minute nodules, and more deeply seated.
3. Orifices of sebaceous follicles often gaping, and distended with hardened sebum-plugs.	3. Sebaceous follicles not specially involved.
4. Never ends in ulceration.	4. Very commonly ulcerates—at parts at least—during some period of its course.

Lupus erythematodes.	**Seborrhœa sicca.**
1. If scales present, they consist chiefly of epidermis, and the under surface sends little processes into the sebaceous follicles.	1. Crusts consist chiefly of sebaceous matter, though mingled with epidermis.
2. Skin beneath crusts is dry, and dusky-red or violet.	2. Skin beneath crusts is oily, but otherwise healthy or slightly reddened.
3. Sebaceous follicles filled with hardened sebum-plugs.	3. Sebaceous follicles filled with soft white sebum-plugs, which escape in great numbers on pressure.
4. On disappearance, a cicatricial appearance of the skin is left, except when the inflammation is very slight.	4. Leaves no trace behind it.

Lupus erythematodes.	**Tertiary syphilitic eruptions.**
1. Often of many years' duration.	1. Chronic, but not nearly so much so.
2. Oftenest met with on the face, ears, and head.	2. Common on the face, though never assumes the butterfly form previously described, and other parts frequently involved.
3. More or less symmetrical.	3. Generally non-symmetrical.
4. Colour dusky-red or violet.	4. In the chronic stage brownish or coppery.
5. Never the seat of ulceration.	5. Ulceration (presenting the characters already described) common.
6. Occurs in strumous subjects.	6. Occurs in syphilitic subjects, and other manifestations of syphilis may be present.
7. Very obstinate, and little influenced by constitutional remedies.	7. Easily removed by antisyphilitic remedies, local and constitutional.
8. Sebaceous follicles often patulous, and plugged with plugs of sebum, and scales very adherent.	8. Sebaceous follicles not involved, and, if scales are present, they are thin and not very adherent.

3. LICHEN SCROFULOSORUM.

This very chronic and mild affection, which was first described and delineated[*] by Hebra, commences in the shape of little papules situated at the orifices of the hair follicles. They are about the size of millet-seeds, have a pale-yellow or brownish-red colour, and are covered with minute scales. They are arranged in clusters, or even in circles or segments of circles, are accompanied by little or no itching, and, if not treated, have a tendency to remain long without undergoing any material change. When they disappear, they leave behind them for a time little pigmented spots, or even minute cicatricial depressions. They are generally limited to the trunk of the body in adults, but in children they are sometimes, even exclusively, observed upon the limbs. When the affection has reached a high pitch of intensity, other lesions appear. "These consist," says Hebra,[†] "in the formation of more or less bluish-red tubercles, as large as lentils, and quite distinct from one another. They appear in intervals between the groups of papules, and also on parts, such as the limbs and face, where there had been none of the lichenous papules. The tubercles resemble those of acne, and undergo exactly the same changes as in that affection. In some of them a purulent fluid develops itself, which afterwards dries up or is discharged, when the tubercles themselves disappear; others of them do not suppurate, but gradually subside. In either case they leave discoid, darkly pigmented maculæ of the size of lentils; and they are followed by a fresh eruption at other spots. The cuticle of the surface between the tubercles is often cast off in small branny scales, having a fatty lustre, and this gives the skin generally a peculiar cachectic appearance."

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[*] See *Atlas der Hautkrankheiten*, 3 Lieferung, Taf. iii.

[†] "On Diseases of the Skin, including the Exanthemata." By Ferdinand Hebra, M.D. The *New Sydenham Society's translation*, vol. ii., p. 53.

Lichen scrofulosorum is most frequently met with in children, although Hebra's original cases all occurred between puberty and twenty-five, probably because most of the patients in his *clinique* were adults. It is more common in males than in females, and is generally associated with other manifestations of strumous disease, either of the skin, glands, or bones.

The diseases most apt to be confounded with it are lichen ruber, eczema lichenoïdes, and syphilitic lichen, the distinguishing features of which are indicated in the following tables :—

Lichen scrofulosorum.	**Lichen ruber.**
1. Eruption confined to the trunk of the body usually, and never universal.	1. Most frequently commences on the limbs, but the fully developed disease involves the whole cutaneous envelope.
2. Papules pale-yellow or brownish-red; arranged in groups, but not confluent, and tendency to healing in the centres of the patches, leaving little pigmented or even cicatricial spots behind them.	2. Papules red, not arranged in clusters, and soon coalesce, forming dark red infiltrated patches; and, on removing the scales, orifices of hair follicles found dilated.
3. Other manifestations of struma usually present.	3. No manifestations of struma, but nails often affected, and, as disease advances, nutrition of body markedly interfered with.

Lichen scrofulosorum.	**Eczema lichenoïdes (Lichen).**
1. Papules pale-yellow or brownish-red, and in clusters, circles, or segments of circles.	1. Papules reddish in colour, and no tendency to circular grouping.
2. Eruption remains papular and is dry throughout.	2. Papules may become vesicular or pustular; skin becomes infiltrated, and may be the seat of serous exudation.
3. Little or no itching present.	3. Very itchy.
4. Eruption limited to the trunk of the body.	4. May attack any part, and very often the extremities.
5. Usually other manifestations of struma.	5. Occurs in persons subject to eczematous eruptions.
6. Cured by cod-liver oil internally, and the free application of it to the eruption four times a day with flannel underclothing (Hebra).	6. Cured by treatment applicable to eczema.

Lichen scrofulosorum.	**Lichen syphiliticus.**
1. Papules pale-yellow or brownish-red in colour, and the size of millet-seeds.	1. Papules in the chronic stage coppery, and generally much larger.
2. Eruption remains papular throughout.	2. Often many of the papules become pustular (lichen syphiliticus pustulosus of Wilson).
3. Eruption usually limited to the trunk of the body.	3. Any part may be attacked; common on the extremities, and even on the face.
4. Usually other manifestations of struma.	4. Almost invariably other manifestations of secondary syphilis.
5. Cured by cod-liver oil internally and externally, as above.	5. Cured by anti-syphilitic treatment.

4. SCROFULODERMA.

This term is usually applied to diseases of the skin which present the general characters of strumous affections, as already indicated (see p. 671), but which cannot with propriety be included under the head of lupus or lichen scrofulosorum, although the word, in its literal sense, is of course applicable to every skin disease of scrofulous parentage.

It would be out of place to describe minutely the variations which these eruptions present; but, apart from the formation of strumous abscesses and sinuses, perhaps the commonest form is that which commences with the formation of dull-red or violet tubercles, about the size of a bean, or larger, and unaccompanied by pain or itching; they are very chronic, but not unfrequently suppurate, leaving ulcers having the characters previously described (see p. 671); they may be isolated, or occur in groups, or become confluent, forming patches of varying size, the edges of which usually assume the form of circles or segments of circles. Any part of the body may be attacked, but the extremities and the gluteal regions are its most common seats. Allied to this is that variety of strumous affection described by me a good many years ago * under the name of scrofuloderma verrucosum (Tuberculosis cutis verrucosa). In it the strumous patches, in part or in whole, become the seat of wart-like excrescences. This warty formation can be readily picked off without any, or at all events without much, pain; but a new excrescence gradually grows in place of that which is removed. The patches beneath are not ulcerated, as might be expected, but the papillæ are greatly hypertrophied, project in the form of filaments, which may even exceed a couple of lines in length, and bleed on the removal of the warty mass. The latter is marked on its under surface by depressions corresponding to the elongated papillæ just referred to.

This eruption runs a very slow course, and when left to itself may last for years. As the general health improves, however, either from natural causes or under the influence of treatment, the warty excrescences fall off, and are no longer reproduced, the elevation of the patches diminishes, the colour fades, and at last a cicatrix is left in the site of the previous affection. It is met with in the great majority of instances amongst the poor, and particularly amongst the half-starved and neglected children of the very lowest dregs of the population. I presume that it may attack any part of the body, but I have noticed it oftenest on the hips and on the extremities, especially on and in the neighbourhood of the hands and feet, and I have lately seen a case in which a patch existed immediately behind the roots of several of the finger-nails, and was accompanied by defective growth of these parts. I have been led to understand that similar appearances to the above have not uncommonly been observed in Paris on the hands of medical

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* *Journal of Cutaneous Medicine.* Edited by Erasmus Wilson, F.R.S. Vol. i., p. 26. London: John Churchill & Sons, 1868.

students, and that, from a supposed connection between the eruption and the poison emanating from the dead bodies in the dissecting-room, the term "Tuberculum anatomicum" has been applied to it.

The following cases are good illustrations of this disease:—

Mary M., aged eleven years, was admitted under my care on May 5, 1865. She was a delicate strumous girl, very thin, and with a tendency to glandular enlargements. About four years previous, two patches of eruption made their appearance, one on the left heel, which gradually subsided, leaving a slightly cicatricial appearance of the skin; the other above the left knee, which was in a typical state at her first visit, and corresponded exactly with the previous disease on the heel, to which, therefore, no further reference need be made.

The patch above the knee, when first detected, was a livid tubercle about the size of a bean. It gradually enlarged, and in about a year became covered with a warty-looking mass, which fell off about twelve months thereafter, and a new one gradually grew in its place, which still remained at the time of visit. The patch was then about 1½ inch in length, and 1 inch in breadth; was considerably elevated, of a vinous colour, and covered with a dark warty-looking mass, which was readily detached without pain. On its removal, the papillæ were seen to be much elongated, and the summits of some of them torn and bleeding slightly. There was no pain in the part unless it was pressed upon, no itching whatever, and there had never been either ulceration or discharge.

Cod-liver oil was ordered, but the patient could not take it, so that on May 20 syrup of the iodide of iron was substituted (in half-drachm doses thrice daily), while unguentum hydrargyri oxidi rubri was rubbed into the patch twice daily after the removal of the warty excrescence.

The improvement was very rapid at first, and the warty appearance never returned. By the month of September the disease had entirely disappeared, leaving the skin slightly congested and cicatrised. The steel was recommended to be continued to prevent the return of the disease; and in November, when she was last seen, she remained quite well.

Patrick B., aged thirteen, was brought to me on June 5, 1865. He appeared to be in tolerable health, though he laboured under a bronchitic cough; but he was in a state of the most abject poverty. He had a patch of eruption upon the left buttock, which, according to his mother's statement, was noticed at birth as a small red spot "even with the skin," and which gradually extended till it attained the size that it exhibited when he first came under observation. It was then irregularly triangular in shape, each side of the triangle being about

2½ inches long. It was evidently composed of a number of tubercles, which had become confluent, and was considerably elevated above the level of the skin. The colour of the patch was a very dusky red, and it was covered with a dark warty mass, on picking off which the papillæ were seen to be much elongated, and some of their torn summits bled freely. The warty structure was examined with the microscope, and found to be composed exclusively of epithelial cells. The patient complained of no itching, nor of pain, even when he sat upon the part.

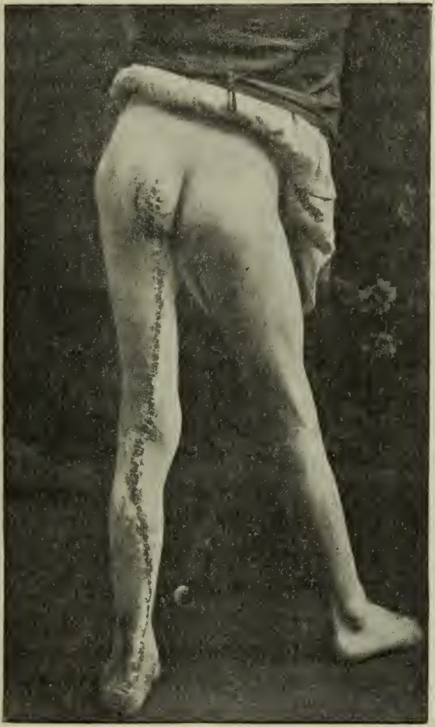

Fig. 80.

Cod-liver oil and syrup of the iodide of iron were prescribed, the former in doses of from 1 drachm to half an ounce, according to how it agreed, and the latter in doses of half a drachm thrice daily. No local measures whatever were employed, so that the effects of the constitutional treatment were fairly tested.

On July 1 the report was that the patch was getting smaller and less elevated, and on November 1 it had all but disappeared, leaving a cicatricial appearance of the surface.

It is not generally known that, in rare cases, scrofuloderma follows the course of certain nerves. The first case which I have seen was sent to me by my friend Dr. Shearer, of Paisley, who has published a full account of it,* accompanied by a photograph plate (see Fig. 80). The patient was a lad, aged thirteen, and the disease had existed for five years when he came to me. The eruption extends "as a continuous ribbon-shaped band, from the left buttock to the base of the little toe; it corresponds, to a considerable extent, with the courses of the small sciatic and short saphenous nerves." Its breadth varies from $\frac{3}{16}$ of an inch to 2 inches. There is considerable thickening and elevation, and, at one part, near the heel it has a distinctly warty character; there has been little moisture, it has a livid tint, is covered at many parts by thin scales and crusts, and is very insensitive.

While under Dr. Richmond in the Paisley Infirmary in December, 1884, an attack of zona appeared on the opposite thigh "near the sacral end of the crista ilii, and parallel with it is an oblong patch of characteristic vesicles, 2 inches long and 1 broad. A similar patch is situated 5 inches vertically below the great trochanter. Another broad patch extends almost continuously downwards and inwards for 7 inches, from a point 4 inches below the anterior superior spine of the ilium; and a smaller patch, arranged in a parallel line to this, is placed over the lower part of Scarpa's triangle." The most interesting point in connection with this outbreak is that the patient says that the eruption on the other leg commenced in the same way. Another case came under my observation in November, 1888, that of a young lady, aged twenty-nine, who had a similar band on the ulnar side of the arm, extending downwards from 3 inches below the elbow to the wrist, from which it crossed over to the dorsum of the hand and terminated at the knuckles of the two middle fingers. It had existed for at least twenty-five years, setting in after a burn with hot tongs in childhood. The band was dry, rough, elevated, livid in colour, cicatriced in the centre, and very insensitive. In fact, it, like the other case, presented the usual characters of scrofuloderma.

The distinguishing features of the only disease likely to be mistaken for scrofuloderma are indicated in the following table:—

Scrofuloderma.	**Tubercular Syphilitic Eruption.**
1. Most common on the extremities or gluteal region.	1. Most common on the face or back, especially about the shoulders.
2. Of a dull-red or violet tint, and consistence soft.	2. In the chronic stage, tint brownish or coppery, and consistence firmer.

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* *Glasg. Med. Journ.*, Feb., 1885, p. 81.

3. Surface sometimes warty.	3. Little tendency to warty formation.
4. If ulceration, the ulcers worm-eaten, with undermined edges, and throwing out profuse granulations.	4. If ulceration, edges of ulcers rounded and perpendicular, and base ash-grey.
5. Very chronic, often continuing for years.	5. Chronic, but not nearly so much so.
6. Often other manifestations of the strumous diathesis.	6. Often other manifestations of late syphilis.
7. Removed by means of caustics and anti-strumous remedies.	7. Removed by mercurial applications, and by mercury or iodine internally.

Treatment.—The *constitutional* treatment of strumous affections of the skin is principally to be relied upon for arresting their further progress, and preventing relapses, when the disease has been removed; while the local remedies are for the most part employed for the removal of existing manifestations. It is in this group of affections that anti-strumous remedies are specially indicated, but they must be given appropriately and with discrimination. Before prescribing them we must carefully inquire into the state of the general health, and correct, on general principles, any digestive or other derangement which may be discovered. This having been done, our sheet-anchor in most cases is *cod-liver oil*, but, in order to get the full benefit of it, we must give it in full doses—often to the extent of 3 ounces per day—and for a lengthened period of time. The more continuously it is taken the better, although in very hot weather, or when bilious derangement has been induced, it may be suspended, and, if necessary, a little antibilious medicine given. Often patients tell us that they cannot take the oil, and the yielding physician is too apt to give in to their fancies; but in nine cases out of ten it is found that they *will not*, not that they *cannot*, take the drug. A little firmness and a little encouragement at the outset are usually all that is required; and I have sometimes met with patients who said that the oil disagreed with them, and that they never could take it, but who after a time not only partook of it with relish, but felt the want of it if, for any reason, it was suspended. Obstinate patients must be told that in quarrelling with cod-liver oil they are quarrelling with their best friend, and that if they determine that it shall agree with them, it is pretty sure to do so in the long run.

Next to cod-liver oil must be placed *phosphorus*, which is a most valuable anti-strumous remedy, and with which alone I have not only succeeded in checking the further progress of a lupus, but also in obtaining a very decided amelioration in its condition. It is beneficial, too, in lupus erythematodes, which sometimes disappears entirely under its use (Bulkley). The preparations which I generally use are either Dr. J. Ashburton Thomson's syrup of phosphorus (of which the medium dose is ʒi to ʒij in water thrice daily), or Schieffelin's phosphorus pills (containing gr. $\frac{1}{33}$ of phosphorus), or a pill prepared for me containing gr. $\frac{1}{30}$ of phosphorus and the same amount of arsenious acid. But arsenic, so valuable in the treatment of many other chronic affections of the skin, is not nearly so universally applicable as phosphorus in this class of affections, although Hutchinson has obtained good results from a prolonged course of it in L. erythematodes.

Another remedy which is very generally employed is *iodine* in some form or other, but I am not so enthusiastic about it as many of my professional brethren, always excepting the preparation mentioned under the head of syphilis—viz., the iodide of starch. The most rebellious to internal remedies of all strumous affections of the skin is L. erythematodes, as a rule, but, as I pointed out some years ago, the iodide of starch (in doses of from ʒi to ʒiv, in water or water-gruel, thrice daily) is well worthy of a trial in this affection. In many cases it does no good at all, but in a few, presenting apparently similar features, it produces a very decided and speedy improvement. If it is going to do good it usually produces an amelioration of the eruption in a very few weeks, so that we soon know whether it is of any use to persevere with it. (For further particulars see treatment of syphilis by means of the iodide of starch, p. 669.)

Everything which improves the general health is likely to be useful to the strumous patient, so that *tonics*, such as iron, especially in chlorotic subjects, quinine, strychnia, &c., may be tried, along with generous diet, change of air and scene, especially residence at high altitudes or at the seaside, and long sea voyages. In fact, if we admit the essentially strumous nature of the affections at present under consideration, of which I myself have no doubt, it follows as a corollary that almost every remedy, acting upon the system as a whole, upon which we place reliance for the removal of other forms of strumous disease, will find its place here.

Some authors have spoken very favourably of the internal administration of perchloride of mercury. In some cases in which digestive derangement is present this may be useful as a preliminary to other treatment, but if a marked improvement—and all the more if a cure—results, the probability is that the case is not one of lupus, but of acquired, or, more likely hereditary, syphilis, the true nature of which has been overlooked.

Tuberculin.—The extravagant laudation with which the treatment of strumous affections of the skin by means of Koch's fluid was ushered in, has given place to an equally absurd depreciation of its merits. When a patient is inoculated for the first time with an appropriate dose of the fluid, there result, in typical cases—(1) elevation of temperature; (2) a series of other constitutional symptoms (*e.g.*, chilliness, headache, pains in the back and elsewhere, sickness, prostration); (3) local reaction. But, in a considerable number of instances, one or more of these symptoms may be absent, or only present in a minor degree. As a rule, however, the more pronounced the fever and other general symptoms, the more decided is the local reaction, and *vice versâ.*

When tuberculin is injected in a case of lupus there occur, within a few hours, redness and swelling, which are not limited to the affected part, but spread to the skin in the vicinity, which often assumes an erysipelatoid appearance, and a serous exudation takes place from the diseased surface which dries into crusts. Each succeeding inoculation, which should not be repeated until the inflammation has quite subsided, is followed by less reaction, and when serum ceases to exude the crusts become dry, contract, and finally fall off, leaving a scaly, rosy surface, the cicatrix being smooth, and less pronounced than after any other local treatment with which I am acquainted.

When the lupus nodules are confluent the result is better than when they are discrete, and the best cases of all are those in which the whole patch is in a state of ulceration—that is to say, the worse the case the greater is likely to be the improvement. The great advantage of this treatment is that, if it does not entirely remove the existing manifestations, it converts a severe case into a slight one, which may afterwards be dealt with by means of one of the methods of local treatment about to be mentioned. It does good in virtue of its *local* effects, and, therefore, it cannot be relied upon alone, any more than other local remedies to cure the disease, but must be supplemented by the constitutional treatment already indicated.

The dose should at first be small—not more than half a cubic millimetre of the 1 in 100 dilution—so as to produce little if any discomfort, and the temperature should not be raised more than 2 or 3 degrees. But a remarkable tolerance is speedily established, so much so, that we can often ultimately give an inoculation, without any result, one hundred times stronger than that which at first produced well marked reaction. In the *Glasgow Medical Journal* for May, 1891, a series of cases is reported illustrative of the beneficial influence of tuberculin in cases of lupus. L. erythematodes is, however, not much influenced by it as a rule.

The *local* treatment, though powerless to prevent relapses, is chiefly to be relied upon for the removal of existing manifestations. When the more severe remedies about to be mentioned are employed, and especially if the disease is extensive, the skin should be frozen by means of ether spray, or by applying, for two or three minutes, a smooth piece of ice, on the surface of which a little common salt has been sprinkled; or the part may be painted several times at intervals of five minutes with a 20 per cent. solution of cocaine; or general anæsthesia may be induced. In all cases, too, in which ulceration is present, crusts and secretions should be carefully removed before local applications are resorted to. With these preliminary remarks we shall now pass in review the local treatment applicable to the different varieties of strumous affections of the skin.

In *lupus vulgaris*, the *mechanical removal of the morbid tissue* must be placed in the first rank. This can best be done by the use of Volkmann's scoops, which are made of various shapes and sizes to suit the requirements of different cases (see Figs. 81 and 82). With these the soft boggy tissue can be readily scraped away, while the healthy firm surrounding tissue resists their action; and after this has been done the raw surface should be firmly touched with solid nitrate of silver, and the hæmorrhage arrested by compression with lint. Isolated lupus nodules may be destroyed with the aid of Mr. Malcolm Morris' new double-screw excavator* (see Fig. 83). With three turns of the instrument the cone can be inserted to its full depth, and on withdrawing the instrument the soft new growth is removed, the resulting scar being flat, pale, and satisfactory.

Another useful method of treatment recommended by Volkmann is multiple punctiform scarification. "Hundreds, or even thousands, of punctures, two lines or more in depth, are made close to one another into the affected portion of the skin, by means of a very small-bladed knife with a sharp point. In many cases, at the end of the process of puncturing, the skin appears slightly discoloured, or even suspiciously white, and like minced meat; yet I have never seen gangrene follow. The punctured parts are then covered with lint, which is pressed on in order to check the bleeding, and is allowed to remain until it comes away spontaneously. This procedure is repeated at intervals of a fortnight or a month, three, five, or even eight times. The first time, the knife penetrates very easily into tissues infiltrated with luxuriant cell growths, and the bleeding is very active. Later, there is more resistance felt, the skin gradually becomes firmer, and the swelling and redness diminish. No scars remain."† Auspitz approves of this treatment, but advises the instrument used for puncturing to be charged with iodised glycerine.

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* *The Lancet*, July 26, 1884, p. 141.

† *Sammlung Klinischer Vorträge.* Leipzig, 1870. No. 13. p. 74.

More recently, Balmanno Squire has recommended the use of a knife with many blades (see Fig. 84), by means of which numerous parallel incisions are made, and then similar ones parallel to the first.

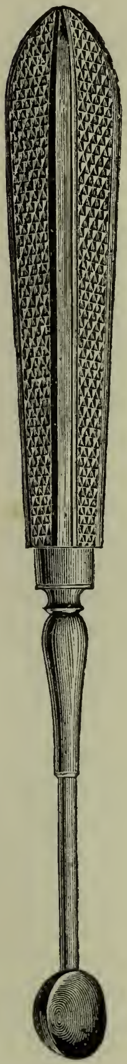

Fig. 81.

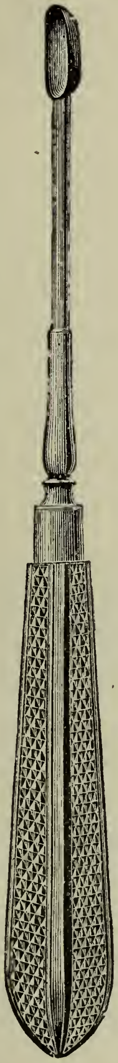

Fig. 82.

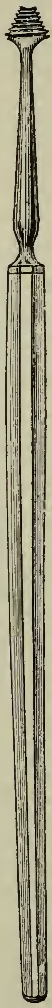

Fig. 83.

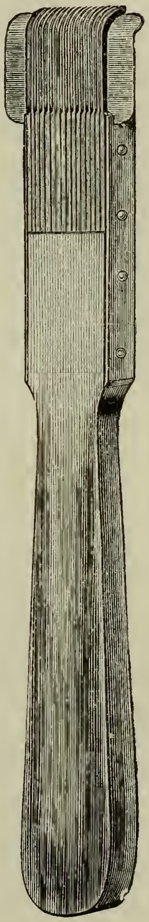

Fig. 84.

The bleeding is controlled by pressure with lint, and the pain is not of long duration.

One of the most useful of local applications is the *solid nitrate of silver*, if it is energetically applied, which was a favourite remedy of

Hebra's. A pointed piece of hard caustic is made to penetrate the lupus deposit, so as to destroy it completely, and to reach the healthy tissue beneath, which is transformed into an insoluble albuminate of silver, and which stoutly resists its further progress. After this no dressing is required, as the black crust which forms is the best protection to the affected part. When the crust falls off, which it generally does within a fortnight, or is removed, the caustic is reapplied, and the treatment continued until all trace of the morbid tissue has disappeared.

Caustics are most extensively employed, each physician having his favourite remedy. *Nitric* acid is used by some, but it is not a very safe remedy, and *potassa fusa* is objectionable, because it is difficult to limit its action to the morbid tissue owing to its diffusibility. Hardy advises the application of a thin layer of a strong ointment of *red iodide of mercury* (equal parts of the iodide and of lard), with the view of exciting a sort of artificial erysipelas. This treatment, which may be repeated when the inflammation has subsided, is often followed by marked improvement, but it is a painful process, and one not altogether devoid of danger. Others are partial to the use of Richardson's solution of *ethylate of sodium* (prepared by dissolving metallic sodium in absolute alcohol, forming a brown syrupy solution). It should be applied daily, with the aid of a glass rod. A saturated solution of *chromic acid* in water acts somewhat similarly, but none of the preparations just mentioned are so highly to be commended as the *acid nitrate of mercury*, which may be applied at intervals of from ten days to a fortnight, the crust which forms being a sufficient protection to the ulcerated surface without any dressing.

Hebra highly approves of a modification of *Cosme's paste*,* which has the advantage of not being so strong as to run the risk of arsenical poisoning, although not more than twice the size of the palm should be operated upon at a time, and which only destroys the morbid structures, and not the healthy skin, which is not even excoriated by it. Strips of linen of a finger's breadth, spread thickly with the paste, are accurately applied to the part; a piece of wadding is placed over them, and kept firmly applied by means of strapping and a broad bandage. In twenty-four hours the dressing is renewed, after thorough cleansing of the surface. After two or three applications the lupus nodules will be charred and of a brownish-black colour, and the surface will at parts be macerated, greyish, and covered with thin pus. In a few hours after the removal of the paste pain and swelling are gone,

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* ℞ Arsenic albi,	gr. x.	
Cinnabaris factitiæ,	ʒss.	
Unguenti Rosati,	℥ss	—*M.*

and in a few days the eschars separate, and the ulcers speedily cicatrize, leaving very little disfigurement.*

Vienna paste (composed of caustic potash 5 parts, slaked lime 6 parts, and made into a thick paste with rectified spirits at the time when it is to be used), or *London paste* (composed of equal parts of caustic soda and unslaked lime rubbed together in a warm mortar when it is required), which is said to be less painful, is often employed in the treatment of lupus. The surrounding healthy skin is protected by means of strips of plaster, and the affected part receives a thick coating of the paste over which a piece of lint is placed. In ten minutes it is washed off with vinegar and warm water, and in about a week the eschar separates and the parts soon heal. It should only be applied to a limited surface, and on covered parts, as it destroys the healthy skin between the nodules as well as the morbid deposit itself, and leaves unsightly scars. The *chloride of zinc* acts in a similar way, and should therefore not be applied to the face. Canquoin's paste is a good way of using it. It is made at the time it is required, by exposing the chloride of zinc to the air until it deliquesces into a thick white fluid, when it is mixed with a sufficiency of starch to make a paste; it is applied in the same way as the London paste, and is kept on until an eschar is produced.

Salicylic acid is a highly prized remedy, and, like Cosme's paste, destroys the morbid deposit without injuring the healthy tissue. It may be applied on lint, as a paste composed of salicylic acid 2 parts, glycerine 1 part, or as an ointment composed of salicylic acid 20 per cent., creosote 40 per cent., stiff lard and wax mass 40 per cent., as recommended by Brooke, or the salicylic plasters devised by Unna may be used, fresh pieces being applied once or twice daily. The pain, which is considerable and lasting, may in great measure be avoided, as Unna has pointed out, by combining the salicylic acid (1 part) with creosote (2 parts). The pain then lasts for less than half an hour, and even this may be avoided by painting the parts with solution of cocaine before each application. The salicylic-creosote plasters are made of six different strengths,† and it may be well to begin with the milder preparations. Unna further advises, as a preliminary to the use of the salicylic-creosote plaster, in cases of lupus non-exedens, the application of strong salicylic plaster (No. 82 containing 63 per cent.), in order to remove the epidermis, and expose the lupus tissue. As has been remarked by Brooke, a patch of skin interspersed with lupus nodules, after it has been thoroughly acted upon by the plaster, has the appearance of a raw surface riddled with holes, as if worm-eaten. When all the morbid deposit has been removed healing takes place, and a smooth scar is left.

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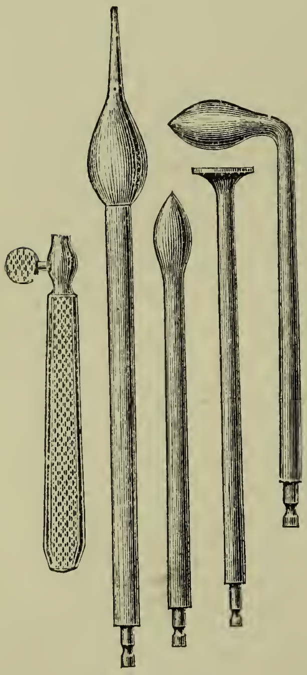
* "On Diseases of the Skin," by Ferdinand Hebra, M.D., and Moriz Kaposi, M.D. *New Syd. Soc. translation*, vol. iv., p. 101. 1875.

† Nos. 76 (20 per cent. S., 40 per cent. C.) to 81 (40 per cent. S., 40 per cent. C.) in the list of P. Beiersdorf & Co., Oelkersallee No. 82, Altona, Hamburg.

Lactic acid is also highly and justly extolled by Mosetig and Hortmann. The skin surrounding the disease being protected by means of a soothing ointment, a piece of lint, wrung out of the pure acid, is kept firmly applied to the part from a quarter to half an hour. It is then washed and dried, and a soothing ointment applied. This is repeated daily until all the morbid tissue has been destroyed.

The *actual cautery* and Paquelin's *thermo-cautery* have been used with advantage, with the aid of the instruments recommended by Mr. Jonathan Hutchinson, and delineated in the accompanying woodcut (see Fig. 85). The *galvano-cautery* has also been used by Hebra and others. Patients treated by these means do not seem to suffer nearly so much pain as when caustics are used, but otherwise they do not appear to present advantages over other methods of treatment. Many other remedies—some of them referred to in connection with lupus erythematodes—have been used successfully, but a sufficient number have been selected to enable the reader to grapple with every variety of the disease. It is only experience which can teach us the best remedies to meet the requirements of individual cases, and each physician has his own favourites. Often the best results are obtained from a mixed form of treatment—*e.g.*, the use of Volkmann's scoops along with caustics.



Size 3/7ths.

Fig. 85.

After a thorough cure has been effected, deformities and contractions are sometimes left, which may be more or less overcome by surgical interference.

In the **treatment** of *Lupus erythematodes*, most of the local applications recommended for lupus vulgaris may be employed, especially the milder of the salicylic and salicylic-creosote plasters, multiple punctiform, and linear scarification, chromic acid, ethylate of sodium, and arsenical paste; but we must carefully avoid those which leave disfiguring scars, seeing that the eruption is almost invariably upon the face, and that the cicatricial thinning of the skin left after the disease has disappeared is usually slight, and, indeed, in minor forms of the complaint may be almost absent.

In addition to the plasters above mentioned, Unna's mercurial and resorcin-sublimate plasters are to be recommended. A very good application in many instances is common soft soap, which is rubbed firmly into the eruption with a piece of flannel, night and morning, after which it is applied to the parts spread upon pieces of flannel. When inflammatory symptoms ensue, the soap treatment is omitted for a time, and the surface is covered with pieces of lint spread with some soothing ointment, such as the oleate of bismuth ointment. Instead of soft soap, Hebra's spiritûs saponatus kalinus * may be used.

In some cases *tar* in some shape or other is of much service, such as a mixture of equal parts of oil of cade, rectified spirit, and glycerine, which may be rubbed firmly into the affected surface night and morning.

Sulphur, too, is often serviceable, and may be used with advantage in the shape of Hebra's modification of Wilkinson's ointment.†

Iodine is likewise a remedy to be recommended, the preparation which I am most in the habit of using consisting of iodine and iodide of potassium, of each 2 drachms, glycerine 1 drachm. The affected surface is painted with this night and morning until a thick red skin forms on the part, or until inflammation ensues, after which it is omitted till these effects have passed off.

In other cases, *chrysophanic* or *pyrogallic* acid may be employed, the former of a strength of from 10 grains to 2 drachms in an ounce of simple ointment, while a 10 to 15 per cent. ointment of the latter may be tried. These are rubbed into the part night and morning, but omitted for a time whenever decided inflammation occurs.

Unna recommends the painting of the parts daily with a 20 per cent. solution of *ichthyol*, and washing it off before each reapplication. If the discoloration is an objection, it may be applied at night and washed off in the morning. Painting with *fluid carbolic or acetic acid* is also of service, the application being repeated whenever the irritation of the previous one has subsided.

* ℞ Sapon. viridis. Unc. quatuor.
Spir. vin. rect. Unc. duas.
Diger. per horas quatuor et viginti, dein filtra et adde
Spir. Lavand. Drachm. duas. —*M.*

† ℞ Flor. Sulphuris,
Ol. Fagi vel ol. cadini, ana, . . . ℥iij.
Saponis viridis,
Adipis, ana, ... Oss.
Cretæ, ... ʒij.
—*M. fiat ung.*

In a certain proportion of cases the best results are obtained from *blistering.* The preparation which I am in the habit of using is Smith's emplastrum cantharidinis liquidum. This dries up in about a minute, after which a poultice may be applied for a few hours, the surface being subsequently dressed with pieces of linen spread thickly with diachylon ointment until it heals. If necessary, the painting may be repeated about once a fortnight.

It will thus be seen that the local measures at our disposal, in the treatment of this affection, are both varied and numerous, but it is as well to have a good many strings to our bow, as all cases do not respond alike to the same methods, even although they appear to be identical.

Lichen scrofulosorum is to be treated by rubbing cod-liver oil very thoroughly into the eruption several times a day, flannel underclothing, which absorbs the oil with difficulty, being used in the interval, so that the part is kept constantly in an atmosphere of it. This, with cod-liver oil and other anti-strumous remedies, is sufficient for the cure of the complaint.

The local treatment of *Scrofuloderma* must depend upon the special characteristics of each case, but among the remedies already mentioned as applicable to lupus erythematodes, the judicious practitioner should have little difficulty in selecting an appropriate one. Foremost amongst these may be mentioned the acid nitrate of mercury, blistering fluid, iodine, salicylic and mercurial plasters, and fluid carbolic acid. In some cases, the best results are obtained by keeping the parts covered with pure vulcanised india-rubber, which should be removed and cleansed twice a day. In scrofuloderma verrucosum, the warty formations should be picked off before any of the above methods of treatment are resorted to.

D. THE ERUPTIVE FEVERS.

It would be quite out of place here to deal in an exhaustive way with this group of diseases, so that the following remarks have reference specially to the eruptions characteristic of each, and to their differential diagnosis.

The specific fevers accompanied by special eruptions are eight in number, viz.:—

(*a.*) Typhus.
(*b.*) Enteric Fever.
(*c.*) Morbilli.
(*d.*) Scarlatina.
(*e.*) Rubeola.
(*f.*) Variola.
(*g.*) Varicella.
(*h.*) Dengue.

(*a.*) *Typhus.*—In this fever the eruption usually makes its appearance from the fourth to the seventh day: it is rarely seen upon the face, and is chiefly met with on the trunk and arms, the abdomen and chest being the parts usually first involved. It consists of dusky-pink, irregular, slightly raised spots, unaccompanied by heat or itching, and giving a mottled appearance to the skin so as somewhat to resemble syphilitic roseola. At first it disappears entirely on pressure, but in a day or two only partially, at which stage it becomes more dusky in tint and is no longer elevated. In the later stages of the fever, too, in the centres of some of the spots, minute extravasations of blood (petechiæ) are commonly observed. The eruption all comes out at once—never in successive crops as in enteric fever—and generally does not disappear finally until convalescence has set in, unless the disease is prolonged by complications or sequelæ; it is rarely absent, though oftener in children than in adults, and the more copious the eruption, and the more livid and petechial it becomes, the more severe, as a rule, is the attack. The odour emanating from the skin and lungs in the latter part of the fever somewhat resembles that of mice, and is very characteristic—so much so that fever-nurses can often, from detecting this typhus odour, form a shrewd suspicion as to the diagnosis.

The following points should assist in distinguishing the eruption of typhus from syphilitic roseola on the one hand, and those due to the administration of copaiba and cubebs on the other:—

Typhus.	**Roseola syphilitica.**
1. Often history of exposure to the contagion of typhus, and period of incubation rarely more than twelve days.	1. History of preceding chancre, followed by roseola in from one to two months.
2. Typhus sets in suddenly, often with rigor, and eruption appears from fourth to seventh day, there being well-marked fever throughout, which in the second week usually assumes the typhoid type.	2. There may be slight fever at the outset, but it soon subsides.
3. Eruption often becomes petechial.	3. Eruption does not become petechial.
4. Eruption subsides in a week or ten days.	4. Eruption often lasts for many weeks.
5. Eruption accompanied by the other symptoms of typhus.	5. Accompanied by other manifestations of secondary syphilis—*e.g.*, alopecia, angina, gland enlargements, nocturnal rheumatism, &c.

Typhus.	**Copaiba and Cubebs Rashes.**
1. Often history of exposure to contagion, after a period of incubation of rarely more than twelve days.	1. Occurs in those who have been taking copaiba or cubebs, and odour of these medicines often perceptible in the urine.
2. Eruption usually absent from the face, and often from the lower extremities.	2. Eruption more extensively diffused, as a rule, and often on the face.
3. Eruption unaccompanied by heat or itching.	3. Eruption intensely itchy.
4. Eruption often becomes petechial.	4. Eruption never petechial, but often urticaria-like blotches are developed.
5. The eruption disappears when convalescence sets in.	5. The eruption disappears within a few days of the cessation of the medicine.
6. Fever is well marked throughout, and in the second week usually assumes the typhoid type.	6. Some fever may be present in the acute stage, but it is moderate, and never assumes the typhoid type.

(*b.*) *Enteric Fever* (Typhoid Fever).—The eruption in this fever makes its appearance from the seventh to the twelfth day: it is generally met with upon the abdomen, chest, and back, is unusual on the extremities, and very rare on the face. It consists of round, moderately elevated, rose-coloured spots from one to two lines in diameter, which—unlike the eruption of typhus—never become petechial, and disappear on pressure throughout. They always come out in successive crops, so that, while each spot remains for four or five days, the whole duration of the eruption is from eight to twenty days. Sometimes only two or three spots come out at a time, but in rare cases there may be hundreds. Generally each crop consists of from two or three to two dozen. They are more numerous, as a rule, in adults than in children, and there is no relation, as in typhus, between the amount of the eruption and the severity of the fever; indeed, some even go the length of asserting that an abundant eruption coincides with a mild attack of the fever. Sometimes it is absent altogether—much more frequently than in typhus—and occasionally, two or three days before the characteristic spots are observed, a scarlet rash is diffused over the whole body, which somewhat resembles that of scarlatina. Besides the rose spots just described there appear sometimes, especially on the abdomen, pale blue stains from the size of a pea to that of one's nail (taches bleuâtres), but it is a question whether they have any necessary connection with typhoid fever, or only occur as a coincidence (see in this connection Art. on phtheiriasis, p. 630).

In those cases in which there is a relapse of the fever—which, according to Murchison, occurs about once in fourteen cases—the eruption reappears with all the other symptoms. The following table may be of use in distinguishing enteric from typhus fever, two diseases which, until they were differentiated, in recent years, by the late Dr. Perry, of Glasgow, were supposed to be identical :—

Enteric.	**Typhus.**
1. Generally insidious in its onset, and slowly subsides.	1. More sudden in its onset (generally with rigor) and subsidence.
2. Average duration three to four weeks.	2. Duration, in uncomplicated cases, two weeks.
3. Eruption appears from seventh to twelfth day. Consists of rounded papulæ, which disappear on pressure throughout, are never petechial, and occur in successive crops, the duration of each spot being from three to five days.	3. Eruption appears from fourth to seventh day and gives a mottled appearance to the skin; after a day or two does not entirely disappear on pressure; petechiæ often seen in the centre of the spots in the second week; never occurs in successive crops, and continues till convalescence in uncomplicated cases.
4. No peculiar odour emanates from the patient.	4. Odour peculiar and characteristic.
5. Eye clear; pupil dilated as disease advances; and a circumscribed flush on the cheek.	5. Eye injected; pupil contracted in severe cases; face flushed; expression heavy, dull, and stupid.
6. Bowels generally loose (constipation *may* continue throughout); evacuations of the colour of pea soup; abdomen tympanitic; pain and gurgling in right iliac region.	6. Bowels generally costive, and no abdominal symptoms present.
7. Epistaxis and melæna frequent; peritonitis a common complication.	7. Epistaxis and melæna rare; peritonitis never occurs, but hypostatic congestion of lungs frequent.
8. Prostration only great towards the end of severe cases.	8. Prostration is present from the first.

Besides the above there are differences in the course of the temperature which our space will not permit of our entering upon in detail.

(*c*.) *Morbilli* (Measles).—The eruption of measles is preceded by fever and catarrh of the whole respiratory tract for four days, during which time diarrhœa also is a common symptom. It may first make its appearance where the skin is congested, as at the site of a sinapism, or where it has been pressed upon; but, unless it is diverted in some such way from its usual starting-point, it begins on the nape of the neck and on the temples, whence it spreads forwards to the face and then down the body, the lower extremities being last involved as well as, usually, least affected. The whole eruption is generally out within a space of three days. Paralysed limbs, as a rule, are only partially implicated, and, indeed, not unfrequently escape altogether. The colour of the eruption is usually that of a deep pinkish-red, although, in malignant cases, it may have a livid appearance; it occurs in the shape of slightly elevated spots, which disappear on pressure, and which are often of an irregular shape, but which, in typical cases, are arranged in segments of circles or crescents, owing probably to the mode of distribution of the cutaneous nerve-filaments. In some cases, especially either before or after an epidemic is at its height, the eruption may be partial, involving chiefly the face and neck, and, should any internal complication occur, one of the first evidences of it is usually the sudden fading or disappearance of the eruption: hence the erroneous belief that internal complications are frequently the result of the driving in of the eruption. On the other hand, if measles attacks a person labouring under some other affection of the skin, such as eczema, the eczematous eruption disappears, to reappear, generally, when the fever has run its course, perhaps even in a more aggravated form. It occasionally happens that measles is unaccompanied by eruption, the fever and catarrhal symptoms being alone present, and the specific nature of such cases is proved by the fact of their occurring during an epidemic of measles in persons who are exposed to infection, who have not had the disease, and who do not take it at any subsequent period.

The fever, catarrhal symptoms, and eruption are at their height upon the eighth day of the disease, and, if there is no complication, they all subside together, the eruption fading first on the parts primarily attacked, though rather more quickly on exposed situations. It is usually followed by slight branny desquamation, especially on the face and upper part of the body, and by slight pigmentary stains, which, however, soon disappear.

The diseases most apt to be mistaken for measles are roseola, scarlatina, rubeola, and variola. For the diagnosis of the last three the reader is referred to the descriptions of these diseases which follow, while the following points serve to distinguish the first:—

In *Roseola* the spots are of a brighter red, and have no tendency to crescentic arrangement, nor do they commence on the nape and temple, spread forward to the face, and thence down the body, as in measles. The eruption is unaccompanied by fever and catarrh, and the affection is neither epidemic nor contagious.

(*d.*) *Scarlatina* (Scarlet Fever).—The eruption of scarlet fever makes its appearance on the second, or third day at furthest: it is generally first observed on the neck and upper part of the chest, whence it spreads down over the body, the face generally (though not always) being spared, and palsied limbs not being attacked, or only to a slight extent. Such is the usual order of invasion, but, if the skin has been congested at any part, as the result, for example, of the application of sinapisms or the undue compression of the body by the clothing, the eruption may first make its appearance at that part. It consists of minute red dots situated at the orifices of the follicles, which at first are discrete, but rapidly increase in number, and soon coalesce, forming a uniform or punctated eruption; and, when, as exceptionally happens, the congestion of the orifices of the follicles is great, the swelling thus produced may give a rough feeling to the affected surface. Sometimes the eruption occurs in patches, but often it is pretty universal, leaving no intervals of sound skin. When fully out, the surface resembles that of a boiled lobster, the colour disappearing on pressure, but in severe cases it assumes a dusky red tint, and very exceptionally becomes livid or even petechial. In two or three days the eruption begins to fade, the subsidence being first observed, as might be expected, at the parts first attacked, and about the eighth or ninth day of the fever the skin begins to peel, the desquamative process occupying one or two weeks. In slight attacks, and where the eruption is slight, the scaling is proportionally trifling, but in pronounced cases it is well marked, and occasionally the skin of the sole or palm, even including the nails, desquamates in one piece. The exfoliation of the epidermis is accompanied by some elevation of temperature, and great care is required during its continuance, else troublesome sequelæ are pretty sure to be encountered. The eruption is rarely altogether absent, although, when slight, it may be overlooked.

The diseases most apt to be mistaken for scarlatina are certain cases of erythema and morbilli.

Scarlatina.	Erythema, the so-called Erythema Scarlatiniformis.
1. Infectious, and second attacks rare.	1. Not infectious, and relapses common.
2. Eruption appears on second day, and with well-marked fever.	2. Eruption is often the first symptom, and little, if any, fever.

3. Commences usually on neck and top of chest, whence it spreads down the body.	3. May commence on any part, and face often involved.
4. Disappears slowly, and with decided desquamation.	4. Begins to fade in twenty-four to forty-eight hours, and desquamation trifling.
5. The "strawberry tongue" is usually seen, and there is sore throat.	5. Tongue not specially affected, and throat not attacked, or only slightly congested.
6. Frequently complicated with rheumatism, suppuration of the middle ear, or inflammation of the cellular tissue of the neck (Scarlatinal Bubo).	6. An uncomplicated affection.
7. Frequently followed by dropsy from implication of the kidneys.	7. No sequelæ.

Scarlatina.	**Morbilli Measles.**
1. History of exposure to the infection of scarlatina.	1. History of exposure to the infection of measles.
2. Eruption appears on the second day, and is fully out in less than twenty-four hours.	2. Eruption appears on the fourth day, and is not fully out in less than thirty-six hours.
3. Eruption not usually on the face.	3. Usually abundant on the face.
4. Nearly as pronounced on extremities as on trunk.	4. Much more scanty on extremities than on face and trunk.
5. Rash is scarlet.	5. It is pinkish-red.
6. Eruption uniform or punctated.	6. Spots more discrete, and often arranged in crescents.
7. Desquamation usually a marked feature.	7. Desquamation slight.
8. Accompanied by sore throat.	8. Catarrh of whole respiratory tract precedes and accompanies eruption.
9. The "strawberry tongue" is usually seen.	9. Tongue not characteristically affected.
10. The fever is high.	10. The fever is less intense.
11. Frequently accompanied or followed by scarlatinal bubo or dropsy.	11. Sometimes accompanied or followed by bronchitis or pneumonia.

(*e.*) *Rubeola* (Epidemic Roseola; Rötheln—German Measles).—Some physicians seem to be under the belief that this is a hybrid of measles and scarlet fever; others that it is a modified form of measles—just as some still assert that chicken-pox is a modified form of small-pox. The general view, however, is that it is a substantive affection.

For my own part, I have no doubt whatever of the correctness of this opinion. It is a complaint which always breeds true, although, no doubt, a mild and *isolated* case of measles might be mistaken for it. It is highly contagious, especially in the case of children, and the period of incubation is usually a couple of weeks. Sometimes the child is a little out of sorts, and drooping for two or three days, before decided symptoms appear; sometimes there is a little watering of the eyes, or a little sneezing, or slight throat irritation; but not unfrequently the patient rises in the morning feeling quite well, and is surprised, on looking in the glass, to find that the face is the seat of an unmistakable eruption. There is a little fever—often none at all, even at the onset—and catarrhal symptoms are either absent or very trifling in character.

The eruption first shows itself upon the face, but it spreads with great rapidity to the trunk and extremities, so much so that, when first detected on the face, it is often found also even down to the feet, although it usually becomes more distinct and abundant there on the following day. It closely resembles that of measles, but it disappears more speedily, being almost invariably entirely gone within three or four days, and it is paler and not so crescentic in arrangement. The eruption on the face differs from that on other parts, in that it soon uniformly covers the cheeks, and gives to them a very flushed and hot appearance and feeling. In the declining stages there is often some itching, and slight desquamation is not uncommon. Simultaneously with the appearance of the rash, the glands behind the ears and at the back of the neck become somewhat enlarged and slightly tender. Altogether, it is a very trifling complaint, one which is altogether without danger if ordinary care is taken, and it is unattended by complications or sequelæ.

(*f.*) *Variola* (Small-pox).—In this disease the eruption makes its appearance on the second or third day of the fever (which, in typical cases, is ushered in by severe headache, severe pains, especially in the back, and vomiting), and the earlier it is observed the more serious is the case likely to be. It usually comes out in three successive crops, with an interval of some hours between each: the first on the face, neck, and upper extremities; the second on the trunk; and the third on the lower extremities. For the first two days it is papular in character, for the next four vesicular, and on the seventh or eighth pustular.

The papules, which for the most part are situated at the orifices of the hair or sebaceous follicles, are firm, red, acuminated, and about the size of millet-seeds; and, no matter how numerous they are, they never coalesce. On the third day they slowly become converted into vesicles, the contents of which gradually change from serum into pus, so that by the seventh or eighth day the eruption is pustular. Owing to the adhesion of the epidermis to the cutis in the centre of each, both vesicles and pustules are depressed in the centre (umbilicated); but, when the pustules become much distended, this adhesion to the cutis gives way, and they become spheroidal. At this stage each is surrounded by a red areola, the pressure of the pus upon the capillaries beneath having driven the blood to the periphery. As the pustular stage becomes developed the parts swell, the amount of the swelling depending not only on the amount, but also on the seat of the eruption, being most marked where there is much loose cellular tissue, especially on the face, where it may be very great, and close the eyes completely. At this stage the odour emanating from the patient is peculiar and characteristic. When the papular stage is fully developed, the fever and discomfort in great measure subside, to reappear in the pustular stage, and this "fever of suppuration" or "secondary fever" is usually in proportion to the extent of the eruption. This is the most critical time for the patient.

About the eighth or ninth day of the eruption it commences to desiccate, a dark spot appearing on the top of each pustule; or the pustules burst, and the contents dry up into crusts, which generally separate between the eleventh and fourteenth days. Each crust, when it falls, leaves behind it a little prominence of a violet tint, which is the seat of repeated desquamation, the scales gradually becoming less distinct, until, in from four to six weeks, the desquamation ceases, and little depressions are left at the site of most of the pustules, which gradually become white. The number of pustules developed varies exceedingly: occasionally there may be only half a dozen; generally there are some hundreds, and not unfrequently they may be counted by the thousand. The face is the part which suffers most; and the late Sir William Aitken, in his excellent work on the *Practice of Medicine*, says, that if the total number of pustules reaches 10,000, at least 2,000 of these will be found upon the face. In severe cases the eruption is so abundant that many of the pustules coalesce, constituting what is called "confluent small-pox," and the disease is proportionately severe; but when it is not abundant the case is usually mild (Varioloid), as when it occurs in persons who have been successfully vaccinated at no distant date (modified Small-pox). The mucous membranes are often attacked as well as the skin, though in a less degree, especially the mucous membrane of the throat and mouth, in which case salivation and sore throat are usually present: the mucous membrane of the eyes may also be the seat of pustules, when conjunctivitis is present, and in some cases ulceration of the cornea ensues, which may result in destruction of vision.

In the confluent form of small-pox, albuminuria is as constantly present in the acute stage as in cases of scarlatina; it seems to occur in about one-third of all cases, and in the last stage is occasionally associated with anasarca.

There are some who hold that small-pox may co-exist with other fevers, such as scarlatina and measles. The accuracy of this statement is open to serious doubt, but sometimes a diffuse erythema covers the whole body, or bright-red spots, varying in size from that of a lentil to that of a finger-nail (Roseola), appear first on the face, and later on upon the trunk of the body. This eruption usually lasts from twelve to twenty-four hours, and disappears as the typical small-pox eruption comes out. Occasionally an erythematous eruption appears at the commencement of the disease on the belly and inner aspect of the thighs, to disappear gradually when the typical small-pox eruption sets in, but the latter does not attack the parts which have been the seat of this erythema. It is oftener observed in some epidemics than in others, in females than in males, and is frequently fatal, especially if the hyperæmia becomes purpurous (Hebra).

The diseases most apt to be mistaken for small-pox are chicken-pox (see that disease), measles, and pustular syphilitic eruptions.

When the eruption of *Measles* assumes the papular form it may be mistaken for small-pox in the papular stage. But in the former the eruption, which is preceded and accompanied by catarrh of the respiratory tract, does not come out till the fourth day, and the papules are larger and darker in tint, and of uniform size throughout; whereas in small-pox those on the face, which are first to make their appearance, are larger than those on the limbs, which are more recent. The fever, too, in small-pox subsides when the papules are fully out, to reappear in the stage of suppuration; while in measles the fever steadily increases whilst the eruption advances, and does not diminish until it is beginning to fade. In a few days all doubt as to the diagnosis is at an end, for, while the papules of measles subside into maculæ, those of small-pox pass into the vesicular and pustular stages.

In *Pustular Syphilis* the pustules may resemble those of small-pox, although they are not umbilicated, but the eruption does not invade the body in the regular order before mentioned, and does not pass rapidly through the papular and vesicular stages before becoming pustular, while it has a tendency to occur in crescents or circles.

There is little, if any, accompanying fever, and although there may be ulceration of the throat, no pustules are to be observed upon the fauces. The eruption is not accompanied by the peculiar odour characteristic of small-pox, and is much more chronic in its course. There is usually, too, a history of syphilis having been contracted, and the pustular eruption is generally accompanied by other manifestations of syphilis.

(*g.*) *Varicella* (Chicken-pox).—This disease, although it somewhat resembles, is altogether distinct from small-pox, and therefore neither vaccination nor a previous attack of the latter affords any protection from it. Though not confined to, it is most frequently met with in, children. The fever is usually very moderate, being generally most distinct when the eruption first comes out, soon after which it disappears. The eruption may be the first symptom observed, or it may not appear even until the fourth day of the fever. In the majority of cases, however, it occurs on the first or second day—first on the upper part of the body, especially the back; later on, on the face and extremities. As a rule, it is scanty in amount, especially on the extremities; but, no matter how abundant it may be, it is never confluent. At first it appears in the shape of red papules, which soon change into vesicles. These are not usually umbilicated, but on the second or third day their contents become opaque, and in a few days dry up into crusts, which in turn soon fall off. The papular stage may be absent, vesicles appearing from the first, and sometimes, especially if the eruption is scratched, the vesicles change into pustules, and then cicatrices may be left; occasionally, too, a few vesicles are seen upon the mucous membranes, especially on the fauces. The only disease likely to be mistaken for varicella is small-pox which has been modified by vaccination, in distinguishing which the following points may be of service :—

Varicella.	**Varioloid** (*modified Small-pox*).
1. History of infection from other cases of chicken-pox, or occurring during an epidemic of the same.	1. History of infection from other cases of small-pox, or occurring during an epidemic of the same.
2. Vaccination is no protection against its attacks.	2. Vaccination—for a certain number of years at least—affords almost complete protection from small-pox, unless the virus is already in the system at the time of vaccination.
3. Fever slight and of short duration, and no secondary fever.	3. Fever more pronounced, and secondary fever in the stage of suppuration.

4. Eruption appears from the first to the fourth day, and generally on the upper part of the trunk first.	4. Eruption appears on the second day, and first of all on the face.
5. Papules less pronounced, rapidly change into vesicles, and often do not become pustular at all.	5. Papules more pronounced. Eruption for two days remains papular; for next four days is vesicular; and on the seventh or eighth day is pustular; but may abort in the papular stage.
6. Whole duration of the disease not more than a week, and no complications.	6. Whole duration of the disease much longer, and complications not unfrequent.

(*h.*) *Dengue* (Dandy Fever).—This fever—an excellent account of which was given by the late Dr. Jas. Christie in the *Glasgow Medical Journal* (September, 1881), and by the late Sir William Aitken in Reynold's *System of Medicine*—is not met with in this country, but only in warm climates, especially in the East and West Indies. The first appearance of the disease was in the Island of Zanzibar, or somewhere on the East Coast of Africa, in 1823. From thence it spread to Guzuratti, which has the closest commercial connection with Zanzibar, and it reached its maximum intensity in the Bombay Presidency in May, 1824. Towards the end of May it appeared in Calcutta, and in June it attacked the troops under Sir Archibald Campbell at Rangoon. In 1827, almost the whole of the inhabitants of St. Thomas were seized, and from this year till 1829 it prevailed in the West Indian Islands, and in the Southern States of America. Wherever it appeared it followed the track of human intercourse. It attacks all ranks and conditions of men, appears at all ages, and with equal frequency in the two sexes. It is highly contagious, and neither scarlet fever nor measles afford any protection from its ravages.

The period of incubation is short—usually from two to four days. It usually sets in suddenly—sometimes with rigor—the fever being high from the first, and accompanied by redness and watering of the eyes, suffusion of the face, frontal headache, and severe pain in the spine and joints: there is often, too, heat and pain at the epigastrium, with vomiting, which may be very persistent, and in any case prostration is pronounced from the first. These symptoms rapidly increase in intensity, the joints become swollen, with a tendency, as in rheumatic fever, for the articular affection to flit about. In a day or two the joint affection, which is often excruciating, and the fever are relieved by perspiration, but on the third or fourth day all the symptoms return with increasing intensity, and an eruption usually appears. It seems to vary somewhat in character, sometimes having the appearance of erythema with considerable swelling, sometimes resembling the eruption of measles, or scarlet fever, or nettlerash, and, according to Dr. Furlonge, being intense in proportion to the intensity of the gastric disturbance: it may be associated with the development of boils. It commences on the head and face, and thence spreads over the body, and the palms and soles are always involved, even in the mildest cases. During its continuance it is often intensely itchy, but within twenty-four hours it begins to fade, being followed by more or less desquamation. About the sixth or seventh day, with the disappearance of the eruption, the fever subsides, and the patient appears to be convalescent, but in a short time there is a relapse, with reappearance of all the symptoms, which may be even as severe as the first attack, but it is of short duration, being usually at an end within two or three days; sometimes this is followed by a second or even a third relapse. Dr. J. G. Thomas, of Savannah, makes the following remarks with regard to the temperature:—"It begins to rise at once, and attains its maximum usually in twelve or twenty-four hours. The fastigium is generally very short, and the defervescence is rapid, and characterised by a succession of remissions and exacerbations, the temperature of each remission reaching lower than, and that of each exacerbation not so high as, that of the preceding, until it has fallen one to one and a-half degrees lower than the natural heat of the body. During the next few days, if the case be closely watched with the thermometer, it will be found that the temperature fluctuates from a degree below to one or two degrees above the normal heat. By the end of the sixth or seventh day there is a slight rise again, being a secondary fever; but, as a rule, this heat soon subsides, and the temperature remains normal unless there is a relapse." Occasionally the disease is complicated with swelling of the lymphatic or salivary glands, and in the latter case salivation is a marked feature. Sometimes, too, ophthalmia is present, and occasionally subacute inflammation of the liver with jaundice occurs. Although a very painful affection, it is rarely fatal, and then usually as the result of syncope in the stage of defervescence; but it leaves the patient excessively weak, and often with a heritage of pain and swelling of the joints, so that recovery may not be complete for two or three months. There are some who hold that it is nothing more nor less than relapsing fever modified by climate—an opinion, however, which does not appear to be well founded; and in any case it seems to be much more associated with heat, moisture, and vicissitudes of weather than with privation.

Treatment of the Eruptive Fevers.—It would be quite out of place to discuss this subject in an exhaustive manner, so that I must content myself with a short reference to the general management of fevers, concluding with a few remarks upon the special treatment of the different forms.

But, at the outset, it must be observed that many of the recommendations which follow apply only to the graver cases, and that, in the treatment of mild fevers and of slight cases, many of them may be dispensed with; indeed, in every case we must beware of the *nimia diligentia medicinæ.*

The patient's room should be in a quiet part of the house, and as large and airy as possible, all superfluous furniture being removed. A narrow iron bed is the best, and often two may be employed with advantage, the one being used by day, and the other by night. Feather beds are to be avoided, as it is difficult to keep them in order, and they are apt to make the patient hot and uncomfortable, a hard mattress being preferable. The bed should be so placed as to be out of the line of draughts if possible, but free ventilation should be ensured, and the temperature of the room kept uniformly between 60° and 64° Fah., a thermometer being attached to the bed as near the patient as possible. It need hardly be said that a patient suspected of fever should sleep alone. With certain exceptions—as when the eyes are inflamed—he should be consulted as to the amount of light to be admitted into the apartment, but all reading, exertion, and excitement must be strictly forbidden, and members of the family and friends should be excluded as much as possible. We should say nothing which is calculated to depress, but, on the contrary, use our best endeavours to cheer him up, and we should not unnecessarily contradict or thwart him, especially if he is irritable. There must be no whispering in the room—particularly if hyperacusis is present—everything being said so loud, that the patient can readily hear what is said, and, if any remark has to be made which it is not desirable for him to hear, let it be said in another apartment.

Seeing that the treatment of fever consists in great part of good nursing, the services of a thoroughly trained, kindly, strong, and judicious nurse—or in bad cases, two, one for day, the other for night duty—should be at once secured. Relatives should on no account be trusted in severe cases, and there are few who have had much experience, who will not endorse the remark of Graves, that "affection and sorrow cloud the judgment, and the mistaken tenderness of relatives, their want of due firmness, presence of mind and experience will frequently counteract your exertions and mar your best efforts."

The fever patient must be nourished, not starved. "If," said Graves, "you are at a loss for an epitaph to be placed on my tomb, here is one for you—'He fed fevers.'" But, as the powers of digestion and assimilation are much impaired, the food must be of the simplest kind, given frequently—generally every hour, or every two hours—and in small quantities at a time; and when there is much exhaustion, the patient should not be allowed to sleep long without support. Of all articles of diet fresh milk, with the addition of a little lime or potash water, is the safest, and many can be fed exclusively upon it. But often calf's-foot jelly, whipped eggs, Carnrick's soluble food, sago, &c., may be given in addition, as well as good beef-tea, chicken soup, and peptonised-meat jellies; but, if diarrhœa is present, soups should be either entirely avoided, or tried cautiously after being thickened with arrow-root or isinglass. Should the patient obstinately refuse food or be unable to swallow, milk and meat suppositories and nutritive enemata may be given, such as half an ounce of Carnrick's beef peptonoids dissolved in a few ounces of warm water after the bowels have been washed out, and repeated every three or four hours. Or he may be fed through the nose. Before this is done the pillows must be removed from under the head, so that it may be on a level with the body. One end of *a narrow* india-rubber tube is put into a tumbler filled with fluid nourishment, and raised a foot or two above the head of the patient, while the other, after the tube has been filled by sucking it, is inserted into one nostril, and alternately opened and shut by pressure between the finger and thumb, so as to allow about a dessert spoonful to enter the nostril at a time. I have in this way succeeded in saving the lives of patients who seemed to be on the point of dissolution at the close of severe attacks of fever.

Thirst can be best allayed by allowing the sufferer to suck ice *ad libitum*, or a spoonful of iced water, toast water, barley water, or a very weak infusion of cascarilla, slightly acidulated with hydrochloric acid (Graves) may be given at short intervals.* The drinking of large quantities of fluid should be forbidden, as they unduly distend the stomach, and do not allay the thirst any better, but the patient should be allowed to empty the contents of the glass, otherwise he is apt to be irritated, and his craving for fluid is unappeased.

As regards the use of stimulants it may be said, without fear of contradiction, that the slighter fevers do not, as a rule, require them, and that even typhus may be treated successfully without them, although they are usually indicated in its later stages. The younger the patient the less likely are they to be required, but, in the giving or withholding of stimulants, our main guide is to be found in the condition of the heart and pulse. We are justified in giving them if the impulse and sounds of the heart are weak, and especially if the first sound is obliterated; if the pulse is very compressible, preternaturally slow, or irregular; or if it is very frequent, and is lowered by the administration of stimulants; or if, on exertion, there is a very great increase of rapidity with a corresponding decrease of strength. Finally, if the typhoid type of fever (indicated by a dry brown tongue, sordes on the teeth and lips, low muttering delirium, *subsultus tendinum*, tremor of the hands when raised, and of the tongue when protruded) is well-marked, stimulants must be given freely. The safest and best stimulants, as a rule, are brandy and whisky, but others may be used occasionally to meet certain indications, such as gin when the kidneys are torpid, port-wine when diarrhœa is present, and dry sparkling wines, well iced, when the stomach is irritable. It is often a difficult question, and one which requires much experience, to decide how much stimulant should be administered, but it is rarely of any use to give more than 8 ounces of spirits in twenty-four hours. Stimulants should usually be given most freely in the early morning, when the vital powers are at their lowest, but in no case, as ignorant persons so often do, should they be allowed to take the place of food; indeed, it is often best to combine the two, as in the case of the brandy and egg mixture.*

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* If the bowels are costive and the kidneys torpid, imperial drink may be given (dissolve 1 to 2 drachms of cream of tartar in a pint of boiling water, and flavour with lemon peel and sugar—Neligan, edit. iv., p. 196), but, if there is looseness, alum whey is preferable (dissolve ʒi of alum in a pint of milk, and strain).

The state of the alvine evacuations should be carefully attended to. Diarrhœa must be checked by such measures as will be mentioned under the head of enteric fever, but in most fevers there is a tendency to constipation, which is best treated as a rule by mild laxatives—such as castor oil—or by simple enemata. When the fever is severe, and all the more if the patient is in a state of stupor, the bladder must be carefully watched, as retention is very apt to occur; and the fact that the urine is dribbling away, instead of putting us off our guard, should rather warn us that this condition is present. Under these circumstances the catheter must be introduced at least night and morning.

Great care should also be taken to prevent the occurrence of bed sores. To this end the patient should be kept dry and clean, the sheet on which he lies should be free of wrinkles, and, when the fever is advanced, he should not be allowed to remain too long in one position, so that the weight of the body may not always be borne by the same parts. Air-pillows and water-cushions are very efficient prophylactics, and, above all, water-beds, by distributing and equalising the pressure. If, notwithstanding every care, redness of the skin appears, the parts should be sponged frequently with camphorated spirits of wine, or

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* Brandy and cinnamon water, of each 4 ounces; the yolks of two eggs; sugar, half an ounce; oil of cinnamon, 2 minims; mix. (Ph. L.)

"painted twice daily with a mixture of collodion and castor oil, or with the white of egg beaten up with an equal quantity of rectified spirits, or with a solution of gutta-percha in chloroform (1 drachm of sheet gutta-percha in 1 fluid ounce of pure chloroform)"—(Murchison). If the skin becomes abraded, it may be painted daily with a solution of nitrate of silver (10 grains to the ounce), and, if sloughing occurs, the parts may be sponged with carbolic oil, and a charcoal poultice applied, or, as Dupuytren suggested, pledgets of lint may be soaked in lime-juice, then sprinkled with a mixture of powdered cinchona and charcoal, and applied. After the sloughs have separated, a stimulating lotion, such as Hey's wash, may be used to promote the healing process. In those terrible cases in which gangrene appears wherever a new part of the body is subjected to pressure, the continuous warm bath should be tried.

It cannot be denied that, even at the present day, far too little attention is bestowed upon the element of fever; for it should never be forgotten that fever is of itself, either from its intensity or from its long continuance, a source of great danger, apart altogether from the cause which has induced it. And I have no hesitation in expressing the opinion that thousands of our countrymen are sacrificed annually owing to a neglect, or to a depreciation, of the element of fever.

No more serviceable nor more generally employed instrument than the clinical thermometer has come into use in the practice of medicine in recent years, but of how little value is it to the unfortunate patient if its readings are limited to aiding our diagnosis, or to giving an opinion as to the probable upshot of the complaint, as is so frequently witnessed.

Fever is a consuming fire which, so long as it lasts, is accompanied by progressive emaciation and by increasing debility, so that, as a rule, it demands not inaction (on the lines of the old dogma that fever is an effort of nature to free the system from the noxious elements produced by the disease, and is therefore to be encouraged), not the use of so-called antiphlogistic remedies, but the employment of supporting measures.

There are probably few at the present day who do not more or less act upon this principle, and who would not admit that the more intense and persistent the fever, the greater is the necessity for the administration of stimulants. But, if a patient in danger of death from pyrexia must be well fed and freely stimulated, he must also be otherwise well nursed.

These measures are of themselves calculated not only to mitigate the ravages of the fever, but also to a certain extent to lower its intensity; but, although indispensable to the maintenance of life, they cannot alone be relied upon to bring down the temperature in serious cases.

As is well known, the credit of having introduced the cold-water treatment of fevers—chiefly in the shape of cold affusion—is due to James Currie, the founder of hydropathy towards the close of last century; but, while hydropathy has flourished more and more since his day, the hydropathic treatment of pyrexia was soon forgotten, partly from the dread of an outraged public opinion, and partly because the wished-for result was not obtained, owing to its not having been used with sufficient energy and persistence, nor with an abiding faith in its efficiency.

Cold, in some shape or other, is the most natural, and at the same time one of the most powerful, measures at our disposal for reducing the temperature, although we must remember that the cooling down of the living body is a much more complex problem than that of cooling a body not endowed with life. This is apparent if we study the effects of the cold bath on a healthy person. The body protects itself in two ways. In the first place, the cutaneous capillaries contract, thus limiting the abstraction of heat; and, in the second, there is a greatly-increased production of heat, so that, although, after the bath a slight cooling of the body takes place, during it (if it is not too long continued, and if the water is not too cold, thus putting too great a strain upon the regulating apparatus) there is no lowering, but even a slight rise of temperature. It is the same with a fever patient with this exception, that the regulating power is not so active, and thus he is not so able to resist the cooling process. But still it is the persistent power of the fever patient to keep up his high temperature, just as a healthy person tends to keep up his normal temperature, which is the chief difficulty in the way of treatment.

Some benefit is to be derived from allowing our patient to suck ice *ad libitum*; from icing his food and drink; from sponging the body frequently with iced water or rubbing it with lumps of ice; and in certain cases Liebermeister's suggestion may be tried—viz., that of washing out "the intestinal mucous membrane for a length of time with a constant stream of cold water, by means of a double-action œsophageal tube carried far up the rectum, one pipe of which should be put in communication with the reservoir." In other cases cold affusion may be tried—although patients often object to it—and this may be done by bringing the head beyond the edge of the bed and pouring a quantity of cold water upon it. A more effectual method of treatment is the cold pack; and it has been estimated that three or four packs, each of half-an-hour's duration, is equivalent to a cold bath of ten minutes. Another useful remedy is the application of iced cloths to the abdomen, as recommended by me some years ago in the treatment of acute phthisis, which may be continued for half an hour or more at a time, the process being repeated as often as required, more especially if it is agreeable to the patient, who sometimes asks for its repetition.

The application of iced cloths is made in this way :—The night dress is pulled well up over the chest, so as to avoid any possibility of its being wet; and, for a similar reason, a piece of Mackintosh is placed across the bed under the patient's body, and another piece between the iced cloth and the bed-clothes. The usual bed-clothes are arranged so that they reach up to the lower part of the chest only, which latter is covered with a separate blanket in order to prevent unnecessary exposure while the iced cloths are being changed. Two pieces of flannel are employed in the process, each being sufficiently large, when folded into four layers, to cover the whole front and sides of the abdomen. One of these, wrung out of iced water, is applied, while the other is left in a large basin filled with iced water at the side of the bed. The pieces of flannel are changed every minute, or so often that *they still feel cold* when removed. The changing of the flannel, especially if two persons are in attendance—one to remove the bed-clothes and the flannel, the other to apply the piece which is freshly iced—can be effected with great ease and rapidity, and without exposing the patient to any injurious extent, if the preliminary arrangement of the bed-clothes is made in the way indicated. I have thought it right to mention these apparently trivial details, because I have often seen the process carried out in such a way as to be perfectly futile, and because I have frequently been interrogated on the subject.

There can be no doubt, however, that the most certain and speedy manner of reducing the temperature by cold is by the use of the cold bath. In cases of great exhaustion this procedure involves considerable responsibility, because the slight fatigue involved in putting a patient into and taking him out of a bath may prove the last straw which determines a fatal issue from syncope, and because it is apt to appear to the patient's friends to be a very heroic remedy. But, although this last consideration need not weigh with us if there seems thereby a chance of saving life, I am inclined to think that the medicinal treatment of hyperpyrexia, in combination with some of the milder methods of applying cold, will come more and more to supplant the use of baths, especially as we are almost daily becoming acquainted with new drugs which act with nearly mathematical precision in the way of lowering the temperature of the body. At the same time, I must admit that I have experienced most brilliant results from the use of the bath, and one case I shall not forget—that of a young governess labouring under typhoid fever of a severe type, with a temperature of above 105° F. at the end of the third week of her illness. She had profuse diarrhœa, hæmorrhage from the bowels, pronounced hypostatic congestion of the lungs, and was almost insensible and pulseless. In this case, in addition to giving quinine in large doses, she was put into a cold bath, after which she almost immediately rallied, and, although it was some days before the temperature became permanently normal, she made an excellent recovery.

As regards so-called antipyretic medicines, space will only permit of my referring to four—(1) Salicine and the Salicylates, (2) Quinine, (3) Kairin, and (4) Antipyrin.

Salicine and the salicylates have been much vaunted of late as antipyretics. Thus Dr. Lauder Brunton, in his valuable work on Pharmacology, Therapeutics, and Materia Medica, recently published, says of salicine, p. 939, "It is an antipyretic;" and of salicylic acid, p. 741, "It is a most powerful agent in lowering the temperature in fever." Now, everyone will admit that, in cases of rheumatic fever, these drugs generally speedily bring down the temperature to the normal; but why do they do so? Not because they act upon the heat centre, but because they remove the rheumatism which is the cause of the fever. As a matter of fact, they cut short the febrile movement just as the surgeon's knife does when he opens an acute abscess and gives free exit to the pent-up pus.

But, further, you will sometimes find that even although salicine puts a stop to the pain and swelling of the joints, it does not of necessity control the fever. This is well illustrated by a case reported by my colleague, Professor Gairdner, of which the following is an outline:—*

A female, thirty-five years of age, was admitted into the Western Infirmary, 4th April, 1877, with acute rheumatism of six days' duration, attributed to getting her feet wet. There was a history of a similar attack nine years before. All the joints except the hips and shoulders, were swollen and painful, and there was pericarditis with evident effusion, accompanied by pain in the præcordial region and headache. On the night of admission the temperature was 103°·8 F., and salicine in 20-grain doses was given every hour, but it was subsequently changed to salicylate of soda; and, although, with the exception of severe headache, all pain had completely subsided by mid-day of the 5th (twenty-four hours after admission), the temperature rose rapidly till it culminated on April 6, in 106°·2 F. Salicine was pushed in large and frequent doses to watch its effect on the temperature; but, as this gradually rose to hyperpyrexia, the treatment by means of iced-cloths to the abdomen, above referred to, was employed, with the effect of bringing down the temperature rapidly. and keeping it perfectly under control. She had in all 600 grains of salicine, and 200 of salicylate of soda.

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* *Glasg. Med. Journ.*, Oct., 1877, p. 435.

In a paper recently published by Dr. Holland, of St. Moritz, giving cases of phthisis treated by means of antipyrin, I find that in six of them the salicylate of soda was tried, and in not a single case was the temperature lowered in the least. To tell the truth, I have no faith in the salicylates as antipyretics except to the extent already indicated.

But, while sceptical as to the antipyretic virtues of the salicylates, I have formed a very different opinion with regard to *quinine*, which I was taught in my student days to avoid sedulously in all cases in which fever is present—though, curiously enough, an exception was made in favour of intermittent fever. It is unnecessary for me to dwell upon this subject, because probably all will admit that quinine is a powerful antipyretic, if given in large doses (10 to 40 grains in a single dose, or in divided doses within an hour). In fact we must, as Liebermeister has remarked, give such a dose as will bring down the temperature for a time to the normal, on the principle that an extremely violent fever, which has occasional intermissions, is much less dangerous than a less violent fever which is continuous, or only shows slight remissions.

The other remedies to which I refer have only been employed in recent years, so that their virtues as anti-pyretics have not yet been so universally recognised, although in some respects they are decidedly superior to quinine—these are kairin and antipyrin.

Kairin is an artificial alkaloid recently built up synthetically by Dr. Otto Fischer, of Munich, and is described as being the hydrochlorate of oxy-chinilin-ethyl. This (with other similar bodies) was handed over to Dr. Filehne for examination in 1881, who found it a most powerful antipyretic. The dose is 8 to 16 grains every hour until the temperature is reduced nearly to the normal, and generally three hourly doses are sufficient. As the temperature falls the pulse and respiration become slower, and there is generally profuse sweating, which, however, ceases when the temperature is normal. The sweating may usually be prevented by administering an anti-sudorific about a quarter of an hour before the medicine is commenced, such as a pilule of agraricin (gr. $\frac{1}{20}$) (Riegel), or (gr. $\frac{1}{70}$) of atropia. As the temperature falls the patient feels more comfortable, and there is never any really bad symptom unless the drug is impure, in which case cyanosis and collapse have been known to result. But within twelve hours of the commencement of the kairin the urine becomes greenish in colour, and this continues for about twenty-four hours after it is stopped. When the influence of

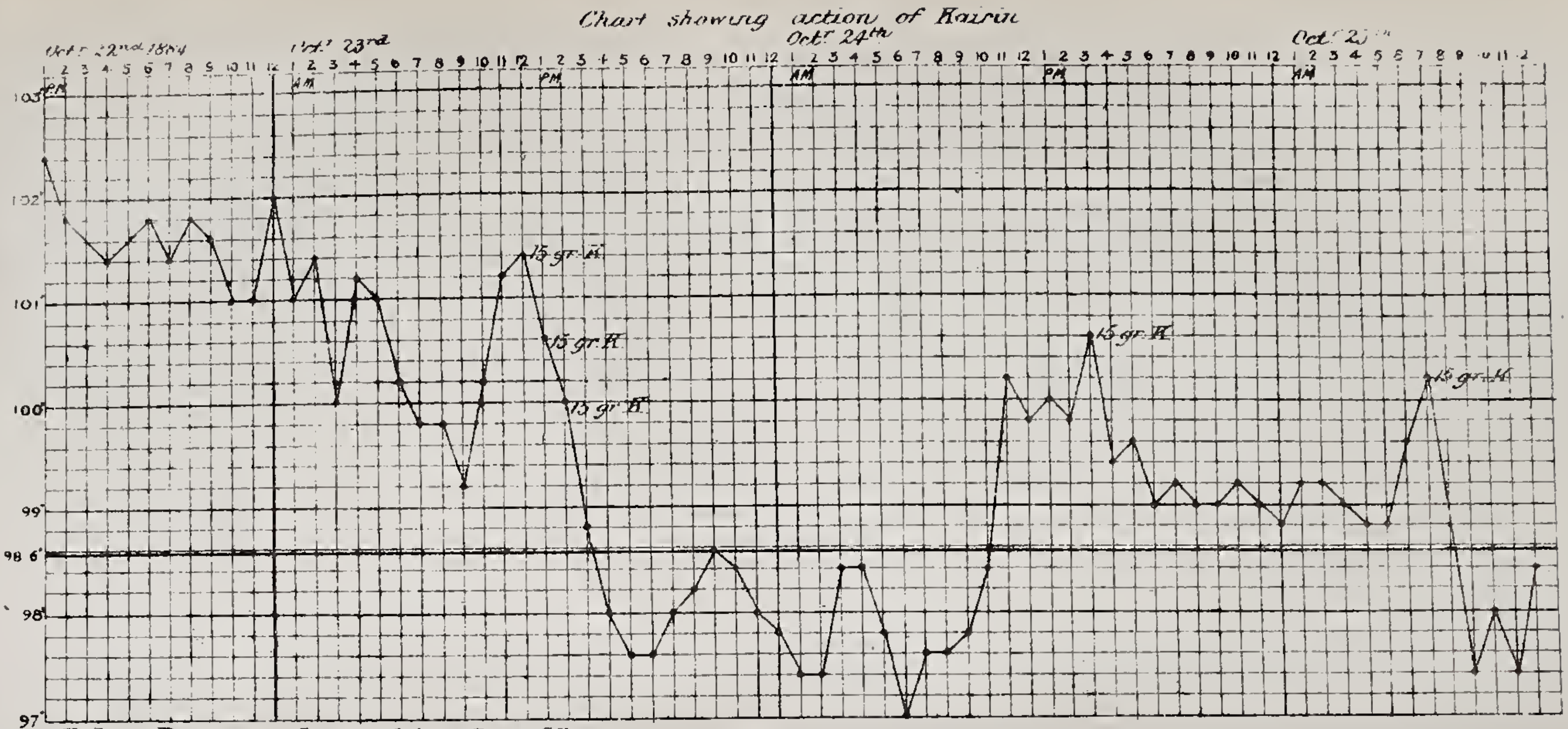

Chart showing action of Kairin

Robert Denison, Cancer of Ascending Colon.

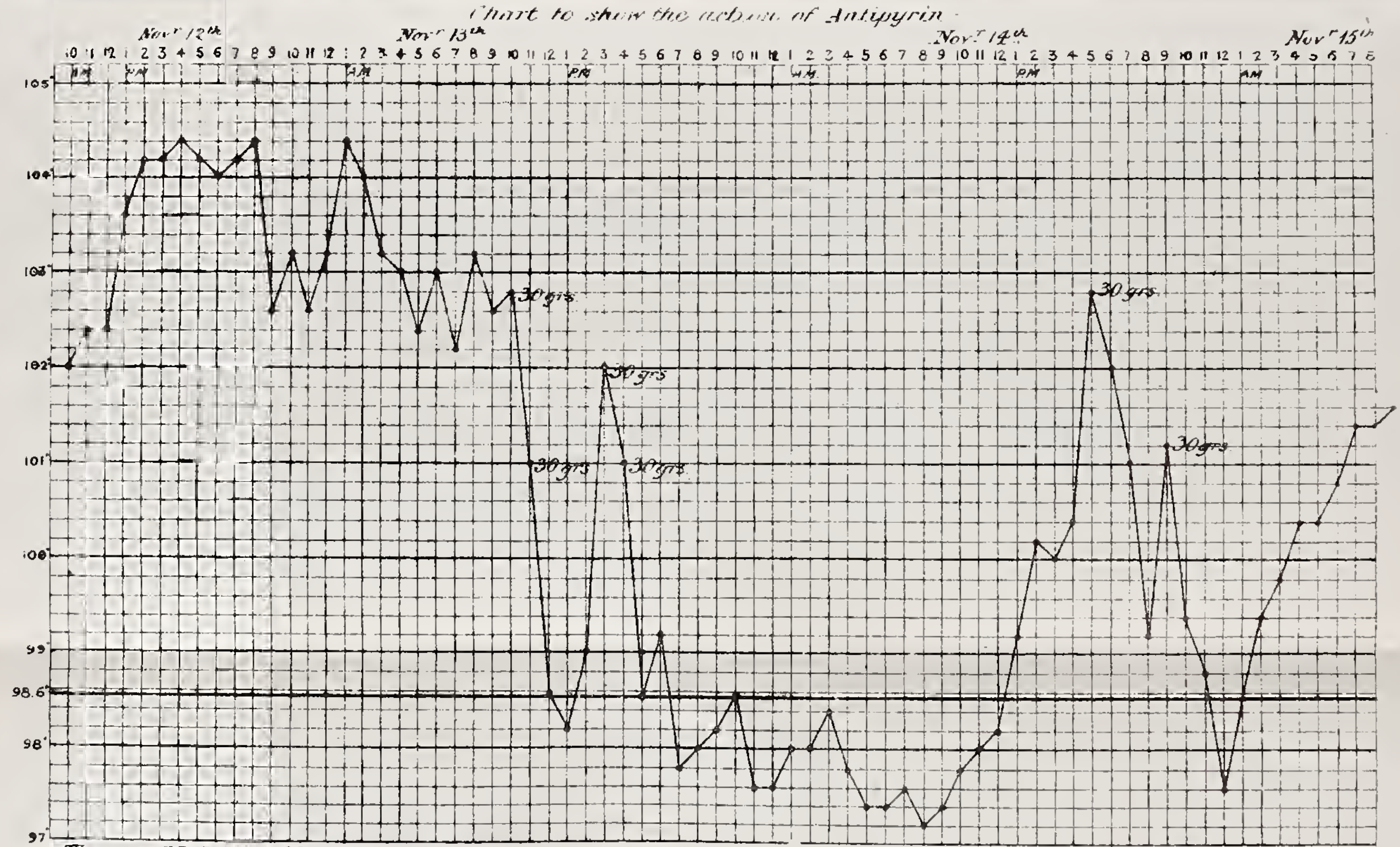

Chart to show the action of Antipyrin

Thomas Neil. Age 28 Labourer. Typhoid Fever.

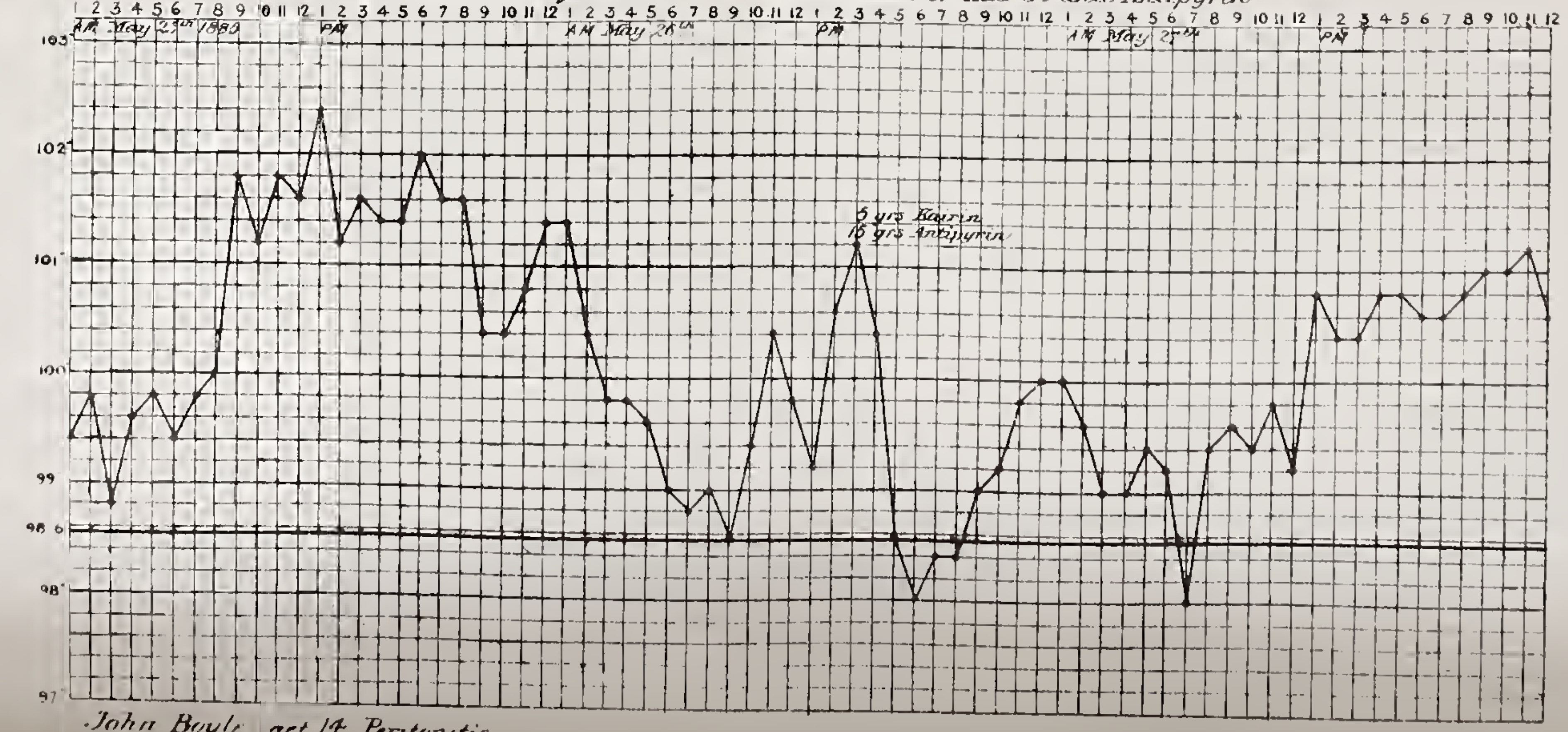

Chart showing action of a combination of Kairin and Antipyrin

John Boyle aet. 14 Peritonitis

the kairin is exhausted, which occurs generally in from two to three hours according to the dose, the temperature rises, and then the patient experiences a feeling of chilliness, and even a severe rigor is far from uncommon. (See Chart illustrating the effect of kairin in a case of cancer of the ascending colon.)

This medicine has an advantage over quinine in so far as it brings down the temperature more rapidly, but it labours under the serious disadvantage that its effects are more transient.

Antipyrin is a medicine still more recently introduced, and is a synthetic alkaloid belonging to the group of chinilin derivatives, for which we are indebted to Dr. Knorr of Erlangen. The dose is from 15 to 30 grains, and the first effect of its administration is a dilatation of the cutaneous vessels, which is soon followed by a fall of temperature, accompanied by sweating. The normal temperature is not influenced by it, but where fever is present three hourly doses of 15 to 30 grains generally bring it down to or below the normal. (See Chart illustrating the effect of antipyrin in a case of typhoid fever.)

While both kairin and antipyrin must be regarded in the light of very certain antipyretics, my present feeling is in favour of the latter. It is comparatively devoid of taste, is readily dissolved in water (1 in 3 in the cold), so that it may be administered subcutaneously if desired, and it does not discolour the urine. It not only lowers the temperature with at least as much certainty as kairin, but is, as a rule, more permanent in its effects; the latter too often produces vomiting, headache, and epistaxis, and when the temperature begins to rise a rigor very frequently ensues, which, to say the least, is an unpleasant occurrence, and which may also lead to errors of diagnosis.

Quite recently Mingazzini has tried the effect of giving the two medicines in combination, and his experience is that in this way a more marked and more permanent fall of temperature takes place than when either is given separately; and further, that, when kairin is given along with antipyrin, the former does not give rise to the inconveniences which are apt to ensue when it is given alone. (See Chart showing the effect of a combination of kairin and antipyrin in a case of peritonitis.)

Several other new and valuable antipyretics—such as phenacetin and antifibrine—may be used with advantage, but none of them are superior, if equal, to antipyrin. Such are the measures which in my experience are capable of fulfilling the object in view—that of combating the element of fever when, from its intensity, or from its long continuance, it threatens the safety of the patient.

Sleeplessness is often best corrected by the use of antipyretics—indeed, sound and refreshing sleep is often the result of lowering the body temperature—but, if these fail, or the fever is not high, we must have recourse to sedatives or narcotics. Bromide of potassium, sodium, or ammonium in ʒi doses every two or three hours, is sometimes successful, though not so likely to be of service as chloral hydrate, gr. xxv of which (dissolved in syrup of oranges and peppermint water) may be given, and repeated in a couple of hours if necessary. Or instead of either, bromidia may be tried (a teaspoonful of which contains gr. xv of bromide of potassium and chloral, and gr. $\frac{1}{4}$ of extract of cannabis indica and hyoscyamus). Chloral has two drawbacks, the one that it at times produces excitement even to an alarming extent, the other, that it is a cardiac depressant, and must, therefore, be used with caution, if at all, if there is any tendency to heart failure. Under these circumstances paraldehyde, which is a heart tonic, is strongly to be recommended in doses of from ʒss to ʒi,* or urethan or sulphonal in doses of 20 grains. If other measures fail, opium in some shape or other may be employed, if there is no contra-indication (such as kidney disease, extreme pulmonary congestion, &c.) Opium in combination with antimony was a favourite prescription of the late Dr. Graves,† but digitalis may be substituted for the antimony in many cases with advantage. The most efficient of all opiates, however, as a rule, is the subcutaneous injection of from gr. $\frac{1}{6}$ to gr. $\frac{1}{2}$ of sulphate of morphia dissolved in a few drops of water.

During convalescence from fever the greatest attention is required in order to prevent relapses or sequelæ. The diet should be very slowly and cautiously improved, all mental excitement and bodily exertion must be avoided, and exposure to cold and draughts, while the patient is weak, must be carefully averted.

The special treatment of individual fevers need not occupy much time, as the few remarks which follow must be taken in connection with the preceding sections.

(*a.*) *Typhus Fever* must be treated on the lines laid down under the head of the general management of fever; but in this disease thorough ventilation of the apartment is specially necessary, for, as Lebert has remarked, "cold is much less to be feared than bad air," until the period of convalescence has arrived. Acids—such as dilute sulphuric, phosphoric, or hydrochloric acid in doses of from ♏xv–xxx in a little

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* ℞ Paraldehydi, ...	ʒij.	
Syr. aurantii, ...	ʒvi.	
Tincturæ cort. aurantii, . . .	ʒiij.	
Aquam ad	℥iij.	—*M.*

Sig., ℥ss to ℥iss in a large glass of water.

† ℞ Tinct. opii, ...	ʒi.	
Antimonii tartarati, ...	gr. iv.	
Aquæ camphoræ, ...	℥viij.	—*M.*

Sig., ℥ss every two hours till sleep ensues.

water every two or three hours—have been much vaunted by many. "If the opinion be correct," wrote Murchison, "that the altered condition of the blood in typhus is due to the presence of NH_3, either derived from the original poison or from the products of the destructive metamorphosis of tissue (*e.g.*, urea), the first of the above indications (to neutralise the poison and to correct the morbid state of the blood) will be most readily fulfilled by the administration of mineral acids. But whether acids act as antidotes, as alteratives of the blood, or as tonics, their beneficial effects in typhus are, in my opinion, undoubted; and it is curious to observe that they have been recommended for this disease in all countries since the days of Forestus, Sydenham, Van Swieten, and Boerhaave."

It is not improbable, however, that, if acids are beneficial at all, it is partly in virtue of their acting as aids to the digestive process, from which point of view hydrochloric acid is theoretically to be preferred.

The most frequent complication of typhus is passive congestion of the lungs in the latter stages of the fever. The indication then is to support the strength of the patient, and to give stimulants with a somewhat free hand. Stimulating expectorants containing ammonia and very small doses of ipecacuanha may be given, but opium must generally be avoided, especially if the bronchi are loaded with mucus. In that case a mustard emetic may give relief. He should not be allowed to lie much upon his back, should be encouraged to take deep inspirations frequently, and mild forms of counter-irritation, such as sinapisms and turpentine stupes, may be tried. It need hardly be added that the typhus patient should be isolated, and everything which has come into contact with him should be thoroughly disinfected, as the disease is highly infectious.

(*b.*) *Enteric Fever.*—In this disease, if there is any suspicion of poisoning from sewer gas, the patient should, if possible, be at once removed from its malign influence, and the purity of the water and milk supply should be carefully inquired into, as there can be no doubt that many valuable lives are sacrificed by inattention to these points. There are some who hold that iodine and calomel have a specific influence over this disease. Thus Liebermeister, in many cases, has given from ℈i to ʒi daily of iodide of potassium, and with the effect, he thinks, of notably diminishing the mortality, and he has latterly administered calomel in three or four 8-grain doses during the first twenty-four hours of treatment, if the case came under observation before the ninth day of the disease, and has "every reason to continue it and to recommend it to others." His statistics show that the mortality was 18·3 of those non-specifically treated, 14·6 with iodine, and 11·7 with calomel. For my own part, I am not inclined to admit the value of these and other so-called specifics, and consider that our safest course is to treat the disease symptomatically.

There is much difference of opinion as to whether diarrhœa should be checked, or whether it should be encouraged on the principle that it is an effort of nature to rid the system of the poison. I myself am clearly of opinion that it should be arrested at all hazards, and this can generally be done by the use of astringents and opiates;* but if, as sometimes happens, there is obstinate constipation, and the bowels are not moved for several days, a simple enema, or ʒi of castor oil, may be given (aperients act far more readily in typhoid patients than in healthy subjects, and should, therefore, be given in small doses, and their effects carefully watched and controlled).

Tympanites is generally in proportion to the debility, although it may result from a semi-paralytic condition of the bowel, consequent upon the local lesion and therefore usually demands the pretty free use of stimulants. Friction of the abdomen with oil or with liniment of turpentine, or the application of iced cloths to the abdomen (see p. 714), may be tried; or turpentine and assafœtida enemata; and, if these measures fail, we may try to let off the flatus by the cautious introduction of a long intestinal or œsophageal tube.

Hæmorrhage is to be combated by absolute rest and the free use of opiates to keep the bowels quiescent, with which astringents, as tannic acid or alum, may be conjoined. If the blood does not come from a large vessel, subcutaneous injections of ergotine (gr. iij to v), or ergotinin (gr. $\frac{1}{150}$), two or three times in the twenty-four hours, may be of service.

If perforation of the bowel occurs, the only chance of arresting the peritonitis which ensues is to be found in putting the patient fully under the influence of opium and abstaining from food for a time, although a piece of ice may be sucked occasionally, and, when nourishment is commenced, it should at first take the shape of a teaspoonful of iced milk every half-hour.

Irritability of the stomach in the first week of the fever may sometimes be arrested by the administration of a mustard emetic, but it would be dangerous later on when ulceration has set in. It is sometimes symptomatic of hæmorrhage or perforation, and then the treatment resolves itself pretty much into the treatment of these conditions; but in the later stages it often results from exhaustion, and is then often arrested by brandy and potash water or a little champagne well iced. Hydrocyanic acid and bismuth are often of use, with ice to suck and mild counter-irritation in the epigastric region.

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* *e.g.*, Dover's powder, gr. v, and grey powder, gr. ij; or acetate of lead (gr. ij) and opium (gr. $\frac{1}{4}$ or more) pills; or tannin (gr. ij) and opium pills; or starch and laudanum (ʒi) injections; or subcutaneous injections of morphia (gr. $\frac{1}{6}$ to gr. $\frac{1}{2}$).

The diet must be regulated with the greatest care, seeing that the intestines are the seat of the local lesion, and there should be no material improvement of the diet, nor should the patient be allowed to sit up in bed for a week after the temperature has become normal.

(*c.*) *Morbilli*—In the treatment of measles the patient should be kept comfortably warm in bed, and the temperature of the room should be regulated with especial care, so as to diminish the risk of the catarrhal symptoms passing into those of capillary bronchitis or broncho-pneumonia. The room should be more or less darkened, and the eyes should not be used for fear of the congestion of the conjunctiva terminating in ophthalmia. If the bowels are costive they should be regulated with the simplest aperients, because diarrhœa and digestive derangement are apt to complicate this affection. If the eruption does not appear on the fourth day, and especially if the catarrhal symptoms are well marked, a warm bath may be given, or the surface may be scourged two or three times in the twenty-four hours with nettles—as recommended by Trousseau, who termed the process "urtication"—which generally produces an abundant eruption. If the cough is very troublesome a few drops of ipecacuanha and a very little opium along with aqua acetatis ammoniæ may be given, but if the bronchial tubes are loaded with mucous an emetic of mustard is to be recommended. Complications and sequelæ—of which the most frequent are inflammatory affections of the eyes and of the respiratory and digestive tracts—must be treated according to their nature, but reducing measures should be carefully avoided.

(*d.*) *Scarlatina.*—As measles is usually not a dangerous affection, if properly attended to, and as hardly any one escapes it, isolation of those attacked is not essential except when the epidemic is a severe one, or if we wish to spare a delicate member of the family; but in the case of scarlet fever it is quite different, because it is a complaint which we cannot afford to treat lightly, and because many persons escape it altogether. Every effort should, therefore, be made to prevent the disease from spreading.

Some physicians are in favour of the use of emetics at the outset, if vomiting does not occur spontaneously; and Dr. Peter Hood recommends that these should be followed by a purge to unload the liver and bowels, quinine in full doses being afterwards given. He states that under this method he has not lost a patient for many years, but for my own part, while admitting that it is likely to do good in many cases, I am averse to anything in the shape of routine treatment, nor am I a believer in the so-called specifics which from time to time have been vaunted; our treatment must, therefore, be symptomatic.

During the progress of the fever much comfort is obtained by smearing the skin once or twice daily with hot lard, to which a little camphor may be added to impart a feeling of coolness, and during desquamation this may be continued so as to prevent the epithelium from being wafted about and becoming a source of mischief, and to diminish the chances of the patient catching cold. At this stage carbolic acid may be substituted for the camphor, as a disinfectant, and warm baths three times a week are to be used.

For the sore throat much relief is obtained from sucking ice; from allowing mouthfuls of iced carbolic water (gr. i to ij to ℥i) to lie for a minute at the back of the throat; from the application of cold dressings to the neck; and, when there is much difficulty of swallowing, frozen beef-tea may be used as recommended by Hare. If gangrenous inflammation of the throat occurs, strong acids may be employed cautiously, such as nitric acid or acid nitrate of mercury, along with gargles of carbolic water, or permanganate or chlorate of potash (gr. x to ℥i of water). Should the angina become diphtheritic, which is by no means uncommon, it must be treated on the same principle as we would treat the sore throat in simple diphtheria.

If there is implication of the nostrils the discharge should be washed away with warm salt water (to which a few drops of Condy's fluid or carbolic acid may be added), with the aid of the nasal douche; and should the inflammation spread up to the middle ear the treatment must be similar to that which is employed in non-scarlatinal cases.

A frequent complication of scarlatina is rheumatism, of which the patient often makes no complaint, but which we should look for daily by compressing the joints, and observing whether he winces: when present, salicine or other anti-rheumatic treatment is to be used just as we would do in simple rheumatic fever.

Inflammation of the cervical cellular tissue (scarlatinal bubo) is to be treated by the application of leeches if the case is acute and the strength good, followed by the use of ice poultices; and as soon as pus forms warm poultices should be substituted, and the abscess evacuated as early as possible.

During convalescence the greatest care should be taken to avoid cold, and the patient should not be allowed to leave his room until the throat is quite well and the desquamation completed.

The urine should be examined daily, and, should the kidneys become involved (scarlatinal dropsy), we must adopt the same treatment as we would employ in simple cases, always bearing in mind, however, that the severer measures must, as a rule, be avoided, as they are not well borne.

(*e.*) *Rubeola.*—No special treatment is required for this complaint, which is not a dangerous one, except careful attention to diet and regimen, the regulation of the bowels, and the use of a lotion of carbolic acid (ʒij) or liquor carbonis detergens (℥i) to ℥vi of distilled water, if the itching is troublesome.

(*f.*) *Variola.*—When called to a case of small-pox one of our first duties should be to isolate the patient, if possible, and to vaccinate all those who have been about him, who have not been vaccinated, and to re-vaccinate those who have not been done recently. But, as regards the patient himself, vaccination—recommended by some—is, in my opinion, of no avail to mitigate the severity of the attack. If headache is severe at the outset it may be relieved by cutting off the hair, and applying an ice-bag to the head. In old days the patient used to be overwhelmed with bed-clothes, and every effort was made to induce diaphoresis, but nowadays we endeavour to keep him cool and comfortable, knowing that the more copious the eruption the greater is the severity of the case. As regards the eruption itself various kinds of local treatment have been recommended with the view of preventing subsequent pitting and deformity of the face. Thus, it has been advised to open each individual vesicle, to evacuate its contents, and touch the base with a strong solution of nitrate of silver; or to paint the face with a saturated solution of gutta-percha in chloroform; or with tincture of iodine; or with carbolic oil (1 in 30); or to apply mercurial ointment; or to cover the face with strips of the "emplastrum vigo cum mercurio;" or to apply iced compresses, which undoubtedly diminish the pain and swelling, and moderate the inflammatory action generally. Such measures, however, have not yielded that success which some of their advocates have claimed for them, although the last mentioned is certainly worthy of a trial, but, in any case, the patient should be warned not to scratch the face. When the mouth and throat are implicated in the eruption, similar local applications to those mentioned as applicable to the sore throat of scarlatina may be tried, or a weak solution of liquor ferri sesquichloridi as recommended by Curschmann. If œdema of the glottis supervenes, scarification may be resorted to, but failing this tracheotomy must be performed. When the eruption is declining and the body is covered with crusts, a warm bath may be given every second day, and inunction with warm lard containing $\frac{1}{30}$th part of carbolic acid. Should abscesses form in the subcutaneous cellular tissue they should be evacuated early. During the fever of suppuration we must endeavour to support the strength of the patient, and to reduce the temperature, if it is high, in the way already mentioned under the head of the general management of fever. If delirium is pronounced the patient should never be left by himself for a moment, as otherwise he might do himself some bodily injury, and an attendant accustomed to deal with insane persons should, if possible, be provided. Other complications must be treated on general principles.

(*g.*) *Varicella.*—It is hardly necessary to isolate those affected with chicken-pox, as it is almost invariably a comparatively trifling affection; and very little, if any, treatment is required, with the exception of ordinary care as to diet, regimen, and confinement to bed. The patient should, however, be warned not to touch the spots on uncovered parts, else cicatrices may result, as in small-pox; and if the irritation is great it may be allayed by sponging the part from time to time with a lead or carbolic lotion or a wash containing hydrocyanic acid.*

(*h.*) *Dengue.*—In this disease emetics and purgatives—as recommended by some—and reducing treatment generally should be avoided, unless to fulfil some special indication. The temperature should be carefully watched as high fever is not uncommon, in which case antipyretic treatment (already fully described) must be carried out. The pain in the joints and back may be relieved by the use of liniments of opium, belladonna, or chloroform, and by the internal administration of belladonna in full doses (♏ x to xv or more of the tincture may be given at short intervals), while an opiate at night may be required to procure sleep. Tonics are generally indicated, and especially quinine, which Sheriff recommends to be given in doses of gr. iij to v every three hours; and, during convalescence, everything should be done which is calculated to improve the general health, including, in severe cases, a change of climate.

* ℞ Acidi hydrocyanici diluti,	ʒiss.	
Glycerini (Price),	ʒiij.	
Mist. amygdalarum,		
Aquæ rosæ, āā,	℥iij.	—*M.*

APPENDIX.

ABSTRACT OF CASES REPORTED IN THE "INTERNATIONAL ATLAS OF RARE SKIN DISEASES."

By Thomas H. Bryce, M.B.*

I. **Lymphangioma circumscriptum**—Lupus lymphaticus (Hutchinson)—by Malcolm Morris.—The case reported is the ninth recorded, and occurred in a delicate girl of seven, belonging to a phthisical family. The disease began when she was four months old, and from that time had spread slowly and caused little inconvenience. The disease was characterised by the occurrence of groups of vesicles, superficially resembling warts, placed over the left trapezius from the fourth cervical vertebra to an inch above the acromion process. These vesicles contained a clear albuminous fluid. On their apices, and between them, were dilated capillaries giving a mottled appearance.

A microscopic examination was not made in this case, but Dr. Sangster, in Mr. Hutchinson's cases, found flask-shaped spaces in the papillary layer, some empty, some filled with amorphous material containing leucocytes. Deeper in the cutis were smaller, more regular spaces. These were probably dilated lymph channels, in which the disease arises—the larger spaces being distended and ruptured lymph spaces. The interpapillary portions of the prickle layer were elongated, but the horny layer was not hypertrophied. The hair follicles showed saccular dilatations of their root sheaths, and the mouths of many were blocked with acari folliculorum.

The cause of the dilatation of the lymph channels is unknown. Mr. Hutchinson, Jr., observed an accumulation of cells in the corium similar to those found in lupus vulgaris, and on this fact, and on its clinical relations, Mr. Hutchinson, Sen., has based his name lupus lymphaticus. The absence of ulceration differentiates it from lupus vulgaris—the absence of scarring, and the fact that the lymph, not the blood channels, are dilated, distinguish it from lupus erythematosus. The disease is distinguished from elephantiasis by the absence of general swellings, and from lymphangioma tuberosum multiplex by its occurrence in groups.

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* INTERNATIONAL ATLAS OF RARE SKIN DISEASES.

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II. **Ulerythema acneiforme,** by P. G. Unna, is a hitherto undescribed disease characterised by inflammatory erythema, leading without suppuration or ulceration to cicatricial atrophy as in lupus erythematosus, but originating in the hair follicles and associated with the formation of "horny" comedones, hence named "Acneiforme."

The disease occurred in a healthy girl, aged seventeen. Its distribution was on the cheeks, ears, and hairy scalp. Red elevated papules appeared within a red area, comedones developed, and then the redness disappeared and a scar-like paleness remained. In front of the ears, where the process was most superficial, extremely fine cicatrisation was seen resembling worm-eaten bark; but on each cheek there was a sunken scar-like patch, traversed by white lines or ledges interlacing to form a network or honeycomb in the spaces of which there projected yellow black-headed comedones, about the size of a mustard seed. These, when pressed out, were horny and contained no fatty matter. Extending above and behind the ears, and in an arch over the vertex, and also at the margin of the hairy scalp, but not encroaching on the forehead, were large comedones placed at short distances from one another, round some of which slight cicatricial contraction was seen.

Treatment.—The diseased parts were removed by horizontal section, and the surface dressed with iodoform. Isolated comedones were squeezed out, and cauterised by caustic potash. After two days mercury-carbolic plaster muslin was applied, and a cure was obtained, a smooth scar being left.

Corresponding to the clinical phenomena there were *three histological stages*:—

1. Cellular infiltration, especially round follicles; dilatation of lymph spaces; hypertrophy of prickle layer, especially of lanugo hairs = *Redness—papules.*
2. Great hyperkeratosis of prickle cells and those of hair follicles; lanugo hairs fall out, and comedones form in their follicles; degeneration of fibrous tissue; hypertrophy of muscular and elastic elements = *Paleness and appearance of comedones.*
3. Retrogression and degeneration; horny masses drop out of ledges, and degenerated, keratosed hair follicles forming grooves and pits = *Cicatricial atrophy.*

The disease is purely local and probably parasitic.

III. **Semi-Sclerotic Lupus of the Tongue,** by H. Leloir.—The case described is unique, and by it the existence of lupus of the tongue is established—for it occurred in a patient suffering from lupus vulgaris of the face; the lupoid character of the glossitis was proved by the demonstration under the microscope of lupus nodules with giant cells, and tubercular bacilli were found in some of the sections, as well as by successful inoculation experiments.

The lesions on the face presented the usual characters of lupus vulgaris. The tongue was covered over its posterior three-fourths with nodules, varying in size from a pin-head up to larger than a pea; their margins were rounded, or irregular when two or three ran together; some were smooth, some granular. They were pale and opalescent, especially towards the centre; some were pearly and sclerosed, some of semi-gelatinous consistence. None were ulcerated, but some were superficially excoriated, showing greyish or yellowish erosions. The crevices between were deep and irregular, some sanguinary. There was no pain but discomfort, from impaired mobility, due to infiltration of the tongue tissue.

The palatine arch, the soft palate, the epiglottis, and the mucous membrane of the larynx were all covered by soft whitish or opalescent nodules of varying size from a pin-head to that of a lentil.

The patient was a girl aged fifteen. There were no signs of hereditary syphilis—and the lungs were healthy—she was first submitted to antisyphilitic treatment without effect. The lupus of the face was treated with salicylic paste, galvano-cautery, punctures, scraping, ethereal solution of iodoform, caustics, &c., and finally in great part cured. The lesions of the mucous membranes improved rapidly, but those of the tongue, true mammillated and papillomatous sclerotic lupus, proved more refractory, so that only after three years could it be said to be "nearly" cured, the tongue retaining a lobulated sclerosed aspect due to the cicatrisation.

Ultimately tuberculous disease manifested itself in the lungs.

IV. **Sarcoma pigmentosum diffusum multiplex**, by Ernest Schwimner.—The patient was a Hungarian, aged thirty-eight. He had always been healthy. At twenty-one he had enteric fever, and, soon after, ague. He was married, and two children were born after his illness began, but they were quite healthy. The disease appeared when he was twenty-nine as separate tubercles on the fingers of his left hand, accompanied by severe pain radiating up the arm, and continuing even after removal of the nodules. The affection spread to his hand, then appeared on the right hand, then on toes and feet, and so gradually over trunk and face. He suffered great pain. For seven years antisyphilitic treatment had been carried out without benefit.

He came under Schwimner's observation in November, 1888. He was then fairly well nourished; the muscular development of his legs still remained good, but his arms were wasted. There was nothing abnormal except the skin affection. The whole integument was dark, with smooth, raised, pigmented spots.

On the face were isolated nodules covered by normal skin, but the eyelids were swollen and studded with bluish-red tubercles, varying in size from a hemp seed to a bean, some being confluent, and so deeply placed in the left eyelid as to impair its movements. One tubercle was ulcerating. The eyes were healthy. The auricles were similarly affected; over the trunk, arms, forearms, and legs there were numerous isolated nodules, some covered with normal, some with pigmented skin, all very painful on pressure. The right arm was more wasted than the left. On the legs some nodules reached the size of a cherry, and over the ankle one was ulcerated.

The hands and feet were analogously affected. The skin was of a dark bluish colour, the discoloured area sharply defined, and thickly set with small tubercles. The extremities of the fingers were broadened and flattened. On the left hand the fingers were permanently contracted, on the right the ring finger was flexed, the first and second phalanges being atrophied.

The nodules were elastic but firm. The skin of the prepuce was affected, but not the glans, and the mucous membrane had escaped. The lymphatic glands were swollen and indurated, but all the internal organs were unaffected. Urine was normal. There was persistent pain, coming in neuralgic attacks, and causing insomnia.

Antisyphilitic treatment was given up, and anodynes administered, phenacetin proving the most serviceable. Arsenious acid was given hypodermically, but no improvement was obtained after eight months. The microscopic examination of a nodule showed that it consisted of "spindle-shaped cells" imbedded in a ground substance, scanty and amorphous, but moderately firm; in short, sarcoma of the "fusocellular" variety. The nodules were placed in the cutis vera, and the epidermis over them showed vesicular degeneration.

As to diagnosis:—1. *The gummatous syphilide* was distinguished by the history and progress, by the coppery colour of its nodules, and their greater tendency to fungate.

2. *Mycosis fungoides* is preceded by an eczematous condition of the skin and pruritus, and in the stage of eruption of nodules, there is a succession of new growths which cause diffuse infiltration.

3. *Leprosy* is excluded by the absence of anæsthesia, of eruptions of bullæ, and of ulcerations, and by the absence of affection of the mucous membranes.

V. **Symmetrical Keratodermia of the Extremities,** by Ernest Besnier, is a member of a group of affections of the extremities, hitherto not sufficiently determined.

The lesions were disposed in islets on the palmar aspect of all the fingers, and on the palms over the heads of the metacarpals and thenar and hypothenar eminences. Each islet was characterised by a thickening of the horny layer—prominence of the papillary lines, which were broken by erosions or fissures produced by accidental causes. Each was surrounded by an erythematous zone of 2 to 6 millimetres in breadth. There were similar lesions on the left hand, and also on the feet over the palmar surface of the toes, the heads of the metatarsal bones, and over the heel. The lesions were thus placed on the sites of pressure, but were independent of occupation. There was no modification of sensibility, and no pain, nor inconvenience, save the mechanical difficulty.

Sudoriparous secretion was unaffected, but there was hyperidrosis over the dorsal aspect of the extremities towards evening. The nails were recurved, and the terminal phalanges flattened. The disease was very chronic, having lasted for thirteen years, commencing when he was eight years old. No other cutaneous affection was present, there was no ichthyosis, the hair and teeth were normal. The histological picture by Balzer indicated that the epithelial cells, instead of undergoing the normal desiccation and degeneration, were being transformed into a dense mass of keratine. The whole epidermis was thickened and converted into a homogeneous refractile mass, in which neither the contour of the cells nor their nuclei could be defined. In places there were empty spaces, giving the appearance of a feltwork to the mass. This keratine mass then fissured, the clefts running down to the Malpighian layer, and the whole was held together by the proliferated cells of that layer and the abnormally long preserved horny cells. The papillæ were hypertrophied, and horny cones adhered to them. The sweat ducts were dilated, and looked buried in the thickened epidermis, the cells around being compressed into bundles. Four types of keratodermia may be provisionally separated from keratosis (palmar and plantar) and ichthyosis—(1) The symmetrical congenital and hereditary variety described by Unna in 1883; (2) the erythematous and irritable symmetrical variety commencing in childhood, and perhaps due to a central neurosis; (3) the symmetrical variety, especially of the feet, beginning in isolated foci, but spreading in a degree out of proportion to the degree of pressure, also due to a central trophoneurosis; (4) the accidental keratodermia occurring at any age, as the result of some unusual work, yet distinct from ordinary callosities.

Angiokeratoma, by Vittorio Mibelli.—The patient was a girl of fourteen, from Siena. The lesions were distributed over the dorsal aspect of the fingers, especially over the second and third phalanges, and fewer on the toes. Each was a small transparent tumour, about the size of a hemp-seed, lead coloured, some violet, some red, with still darker superficial spots. Their surface was rough, their consistence horny, and they were sharply defined with no surrounding inflammation. Between these were smaller spots (about the size of a corn grain), with centres darker red than the periphery. The epidermis covering them was hard, almost horny, smooth, and without trace of desquamation. Here and there were transitional forms between these spots and the tumours. From all, the distinctive colour disappeared on pressure. Neither local nor constitutional disturbance was present. The patient suffered from chilblains in winter, and her hands were generally cold, and the tumours assumed a darker hue and firmer consistence in winter. The disease was not congenital, but developed slowly during five years. Small spots like teleangiectases appeared, over which the epidermis was slightly elevated and horny, and these gradually developed into spots and then tumours. When removed, there was no sign of recurrence after a year.

Histology.—The principal and primary change was in the papillæ—they had dwindled and appeared pressed together—their capillaries were dilated, or in places replaced by cylindrical and vertical spaces containing blood corpuscles. Deeper in the cutis were enlarged lymph spaces, some filled with blood corpuscles, and isolated and dilated blood capillaries. Between the connective tissue bundles were some wandering cells, and here and there commencing inflammatory exudation. The horny layer was thickened, but its cells normal. The stratum lucidum and ducts were normal, but the stratum granulosum was hypertrophied, containing excess of keratohyalin. The stratum spinosum was not enlarged.

The further stages consisted in the conversion of the papillæ in the centre of the growth into blood spaces—simple or cavernous—and placed in the stratum spinosum, stratum corneum, or deeper in the cutis in the subpapillary layer. The interpapillary cones extended deeply as slender, sometimes branching processes bounding blood spaces.

Thus each tumour contained a cavernous blood space, and over it was an epithelial hypertrophy, a true keratoma, hence the name angiokeratoma. As the blood space grew the epidermis was compressed, and there was engorgement, serous exudation, and formation of vesicles in the horny layer. The spots showed the same process in slighter degree.

Diagnosis.—The condition is distinguished from simple keratoma (Verruca vulgaris) by the peculiar colour disappearing on pressure and changing in cold weather.

It is classified as a vascular variety of Unna's subclass of mixed tumours, among the homeoplastic tumours of the skin.

VI. Soft Chancre of the Breast, by G. A. Pospelow.—The patient was a married woman aged twenty-five. During treatment for soft chancre of the genitals a half-moon-shaped ulcer appeared on the right nipple—a month later a fluctuant painless tumour developed on the back of the pharynx, which was punctured, but yielded only serum. Iodide of potassium and mercurial inunction were prescribed. Salivation was produced without any marked effect, though the tumour was reduced in size. The ulcer on the nipple healed under simple treatment.

The case is rare, if not unique, according to Pospelow. The only possible confusion would have been a gummatous ulceration. If so it must have been recent as it appeared in hospital. The throat affection, in the absence of a history of syphilis, and in view of its obstinacy to anti-syphilitic treatment, could not be considered a periosteal gumma. Therefore the author held that these considerations, added to the fact that all the patient's symptoms pointed to ulcus molle, justified the diagnosis.

VII. **Chronic Pustular Dermatitis, which spread peripherally,** by H. Hallopeau.—This case was shown by Professor Fournier at the International Congress of Dermatologists in 1889. The patient was fifty years old, and the disease had lasted fifteen months. It was characterised by multiple patches of pustular dermatitis, leaving maculæ, and by suppurative lesions of the buccal mucous membrane.

The lower part of the trunk and upper part of the thighs were covered by a large plaque of deep brown colour. Its borders were well defined, and in places polycyclic. The skin over it was thickened and more or less indurated, and eminences, varying in size from a millet-seed to a sixpence, rose from it. The pigmentation was uniform, but there were numerous more deeply coloured points. This plaque corresponded to old patches of dermatitis, and on it fresh patches could be observed in full activity mostly at the periphery. The lesion was a vesico-pustule, of the size of a millet-seed, containing a thick fluid quickly becoming purulent, and surrounded by a narrow zone of redness, and often induration. Similar pustules formed round the initial one, and so patches were produced spreading peripherally. Then the pustule broke, a crust was formed, which falling off left a darkened roughened area (not an ulcer) surrounded by a circle of pustules.

The patches occurred also on the penis, in the hypogastric and lumbar regions, the right axilla, left cheek, and chin. On the borders of the lips and their mucous surfaces were numerous vesico-pustules; the tongue showed similar lesions and was much furrowed. On the inner surfaces of the cheeks there were red eminences separated by deep furrows, with foci of suppuration, and there were similar lesions on the soft palate and tonsils.

Treatment.—Alternating applications of iodoform and boric acid lotion and ointment speedily improved the condition.

Histology.—M. Darnier's report showed that the papillæ were greatly hypertrophied and their vessels were dilated. They and the cutis vera were œdematous, the interpapillary "rete processes" were greatly elongated, but the characteristic lesion was the diffuse infiltration of the papillary layer with lymphoid cells, forming small abscesses at certain points. These were placed (1) in the papillæ, where they consisted of circumscribed masses of lymphoid cells, degenerating in the centre, active, and infiltrating the surrounding connective tissue at the periphery; (2) in the rete processes of the epidermis, where their walls consisted of irregular degenerated epithelial cells, among which were leucocytes and pus corpuscles, their contents having disappeared; or (3) partly in both these situations.

There was no clue to the origin of these abscesses, nor were micro-organisms found in such numbers in the deeper parts of the sections as to account for them, though the crusts were crowded with bacteria.

Diagnosis.—The characters of the eruption, its auto-inoculability, and its obstinacy to antisyphilitic treatment excluded syphilis—its long duration, its benignity, the extension of suppuration to the subcutaneous tissue, the presence of buccal lesions, and the absence of general disturbance distinguished it from impetigo herpetiformis (Hebra). This is the second case of the kind published; they constitute a new species of disease, but a more scientific name can only be given when the infectious agent is recognised.

Parakeratosis scutularis, by P. G. Unna.—A disease allied to pityriasis rubra pilaris, and named from the characteristic shield-like scales. The patient was forty-one years of age. He had suffered in youth from a red rough spot on his back, and constant scurf of the head.

The disease was of six months' duration and commenced on the head; the nails became affected only six weeks previous to the date of observation. The patient was a healthy man, but had the "facies seborrhoica." The disease affected the scalp, face, trunk, and extremities.

The scalp was entirely covered, except a peripheral strip, with thick crusts. These were greasy, but more chalky on the under aspect, and enveloped the hair in bundles. Each hair had a cuff of a yellowish-white, wax-like, horny substance, an inch or more long, which fused with the crusts. The growth of the hairs was not greatly interfered with, but in the centre they had become thinner, dryer, and greyer than the healthy hairs in the peripheral belt; in front of which there was a circular strip of skin (½ to 1 c.m. wide) which was hairless, red, and rough.

The Face.—The skin round the nose and mouth, the alæ of the nose, and between the eyebrows was greasy and reddened. At the angles of the mouth were fine hard white scales, and on the ears and in the nasal furrows white horny masses projected from the follicles. In the beard there were points of redness, white scales, and many hairs had white horny cuffs.

Over the *chest and abdomen* there were *light yellow-brown patches* (from the size of half-a-crown to that of the hand). The most recent showed the horny cones projecting from the follicles. These were yellowish-red in colour, and both cones and patch projected over the general surface. The larger cones assumed a white colour at their apices, and were covered with scales laid on horizontally; and on still older spots a number of these had run together to form curious dry yellow-white hillocks of scales, with terraced sides, and varying from the size of an almond to that of a plum. The larger the hillock the larger the patch, and each patch had one or more of them. The skin under the scales was dark red, moist and shining, and covered only by the deeper horny layers, not bleeding as in psoriasis, but slightly eroded at the edges, as in nummular seborrhœic eczema. The mouths of the follicles gaped widely, the horny cones remaining attached to the rupia-like mass, and forming projections from its deep surface. When the mass was removed, the underlying skin contracted, the follicles shrunk, and the patch, at first pale, became red, as if previously exposed to pressure. The "central sweat trough" of the back showed a broad band extending from the seventh cervical vertebra, narrowing in the centre and widening out at the sacrum, which exhibited a similar condition, but with few scale masses. The legs showed a few patches on the thighs, but below the knees they were numerous, very red, and touching each other. They were covered by horny scales, flat, thick, hard, and chalky, white in colour, and moist and shining internally. Each scale had a concentric blue-red area round it, and was flat and wavy on its surface, not terraced like an oyster shell as on the trunk.

The extensor surfaces of the arms and forearms were covered with similar patches. All the nails were affected, the front part of the nail-bed being covered by a thick horny layer, which raised the nail from its bed at the sides and centre. On some fingers secondary changes, such as discoloration and splitting, had taken place.

Treatment.—A cure was effected in six weeks by the use of pyrogallol, resorcin, and sulphur preparations, along with frequent soap and water baths. The hair and nails were restored, and only slightly discoloured areas persisted, which were pale in the centre where the scaly masses had been.

Anatomy.—No fungus was discovered. The rupia-like terraced crusts, unobserved previously in any other disease, were peculiarly characteristic. They were thin and hollowed, and from the hollow deep surface the horny cones projected, corresponding to the follicles, and these, fusing at their bases, formed the inner layer of the crust. The small isolated scales, like drops of mortar, consisted of horny cells only; those running together formed the shield-like crusts, which were uplifted owing to the inverted edge of the scales resisting further concentric expansion when once formed. The same resistance explained the bending of the scales, their imbricated arrangement, the arching of the crust, and the stretching of the skin referred to above. The flat scales on the legs must have been free from this resistance.

Under the microscope.—The crusts were found to consist of horny cells, with varying amount of fat; the whole amount of fat being small. The horny cones and columns were pointed at their lower, broad at their upper ends, consisting of hollow horny cells inserted one into the other. Each contained several hairs, projecting one above another as they emerged from the follicles, the oldest being the thinnest. Thus, unless the follicles studied happened to have many hair-sacs, it follows that, in the production of the shields, the follicles must have enlarged and produced the thicker hairs, which, considering the slight degree of inflammation, is not without analogy.

Diagnosis.—While the horny cones resemble closely those of pityriasis rubra pilaris, their occurrence on plaques situated on the seats of election of seborrhœic eczema, the colour of these plaques, and the presence of the distinguishing shield-like crusts identify this disease, which Unna remarks is an anomaly of cornification, with slight superficial inflammation extending down into the follicles and forming the cones. These fuse with the abnormally thick horny layer on the surface to form plates, which are raised on the trunk to form the shields, and which mat the hair on the scalp and destroy it. The affection of the nails is likewise due to the same anomaly of cornification.

The general health was unaffected, and the progress was extremely slow.

The disease is probably parasitic.

IX. **Adenomata of the Sweat Glands**, by E. C. Perry, London.—The patient was a single woman aged thirty-one years. The disease began on the side of the nose when she was ten; when she was twenty-two the pimples had assumed their present distribution, but, during the twelve months before the date of observation, they had increased in size and number.

There was no history of skin disease in the family, and she herself had always been healthy. She had had jaundice when she was five years old. The complexion was pale and clear. There was no seborrhœa, but the perspiration was scanty over the scalp and face.

The distribution of the disease was over the forehead, the root of the nose extending on to the left lower eyelid, the cheeks round the alæ nasi, the upper lip and chin, and there were a few on the scalp. On these situations there were clusters of pale white papules, solid to the touch, and varying in size from that of a millet-seed to a pea. They were free from pain and tenderness. They never had ulcerated. There were no comedones nor teleangiectases.

Nothing but clear fluid exuded when the papules were picked. A few showed black points under the skin.

Histology.—A section of a nodule showed that the epidermis and sebaceous glands were normal, but on the under surface of the corium, and in the subcutaneous tissue, there were numerous much coiled sweat glands, many of the cells of which were loaded with brown pigment, which gave rise to the black points mentioned above. There was no surrounding inflammation.

Diagnosis.—While the microscope determined the diagnosis, the author remarks that adenoma sebaceum (Pringle) can be distinguished by the presence of concomitant vascular hypertrophy or teleangiectasis in that disease, and by the absence of the black points, due to the pigment in the cells of the epithelium of the sweat glands.

The *treatment* adopted by Mr. Davies-Colley of removal at several sittings by curved scissors, or by scalpel, after transfixion with a needle, was completely successful.

X. **Acanthosis nigricans,** by S. Pollitzer.—The case occurred in Unna's clinic in 1889. The patient was a widow aged sixty-two. There was no history of syphilis or tuberculosis, and she had always been healthy. The lesions broke out simultaneously eight weeks before admission to the clinic, and were preceded by slight pricking sensations, except on the hands. It began at the angles of the mouth as a simple fissure.

The disease was distributed over the upper extremities, neck, part of the trunk, and genito-crural region, and also at the angles of the mouth, and within it on tongue and palate.

The affected parts were discoloured, the colour varying from dirty-brown on hands and neck, to grey-white in the axillæ and under the mammæ; and three clinical degrees of the pathological process were to be distinguished.

1. General prominence of the normal cuticular areas, which were deeply pigmented. They looked convex and had a glassy shimmer as on the hands, or actually projected as little flat papillæ, as on the neck, giving the surface a warty appearance. The skin was dry, and its fissures and furrows very marked.

2. Flat pigmented condylomatous growths as at the angles of the mouth, and on the buccal mucous membrane.

3. Actual warty growths, pigmented on the skin surface, and like venereal warts, as on hands, genitals, and within the mouth.

Treatment.—Salicylic acid, cannabis plaster muslin, and sulphur ointment removed the pigmentation somewhat; later, outside the hospital, removal by scissors and cauterisation of the buccal lesions by dilute chromic acid, and soft soap and soda inunctions to the skin, resulted in a disappearance of the condition, but this it was thought was partly due to spontaneous retrogression. The patient ultimately showed symptoms of renal disease, from which she died.

Histology—First Stage—Ichthyosis.—All the layers were hypertrophied, and the pigment cells were in unusual numbers. The stratum corneum was most enlarged and irregular, and was of a diffuse brownish-yellow colour. There was much pigment in the palisade layer. The papillæ and subpapillary regions showed dilated blood-vessels and lymph spaces, and there was considerable round celled infiltration.

Second Stage—Condylomatous Formations.—Simply an exaggeration of first stage in every particular. The papillæ were 6 to 8 mm. long, and the stratum Malpighii was proportionately more enlarged.

Third Stage—Warty Growths.—A still further exaggeration. The cutis was unaffected, but the papillæ had disappeared at the centre of the growth owing to pressure. The Malpighian layer was greatly hypertrophied. The rete pegs at the margins were greatly elongated, bifurcated, and club-shaped. There was a typical growth of the cells, starting concentrically from many centres and thus giving rise to a confused appearance of whirls. There were frequent suggestions of "epithelial pearls." Some colonies of bacilli were found in the growths in the mouth, but none in those on the skin.

No case quite analogous has been published (except the one in the same number of the *Atlas*). The name was given by Unna at the International Congress in Paris in 1889, nigricans being added as a definitive adjective. The disease is distinguished (1) *from simple ichthyosis* in not being congenital, and affecting the flexor surfaces of the extremities; (2) *from keratosis follicularis* which begins in the hair follicles; and (3) *from verruca acuminata,* to which the warts on the mucous membranes are very similar, by its occurrence on exposed parts, its general distribution, and its colour.

XI. **Acanthosis Nigricans,** by v. Janovsky.—This case occurred in a man aged forty-two, a smelter, admitted into Janovsky's clinic in 1888.

There was nothing of importance in the family history, except that his mother died of phthisis. In the personal history there was no trace of syphilis, but a history of indigestion for twenty years, which commenced when he was employed in a manufactory of iron vessels, which he painted with tar. His then employment in an earthenware manufactory was of importance, from the fact that he was exposed to the heat of a furnace, and that he used certain chemicals (soda, tin, alum, borax, and silica) for glazing the vessels, and also because a number of the other workmen showed a pigmentation of face and hands, though no further skin lesions. He imbibed beer pretty freely.

The patient's complexion was dark, and his hair dark brown. The distribution of the abnormal pigmentation was as follows:—His face was of a dull yellowish tint; over the neck the colour darkened into brown, and ceased where the shirt collar rests; in both axillæ and round the waist, especially about the navel; in both hypochondriac regions, the pigment fading towards the spine; also on the scrotum and round the anus; at the bends of the elbows and the backs of the hands. The skin on the palms and between the fingers was light.

The lower extremities were hardly affected.

The disease was of four months' standing, and the lesions were preceded by itching and burning, and roughness and swelling of the buccal mucous membrane. On the pigmented areas the skin was thick and furrowed, between the furrows were smaller fissures marking off areas, which were deeply pigmented, and rose up as papillæ, in some places fine, in others coarse, giving the skin a rough papillomatous or warty appearance. In some places there were little tumours, as round the anus forming little "papillomata." There was a similar papillomatous condition of the conjunctiva, and of the mucous membrane of tongue, palate, gums, epiglottis, and nose, causing the surface to be granular. Larger and smaller papillomatous growths projected free, something like "condylomata (verruca) acuminata" venereal warts.

The author places his case from its clinical features (no histological examination could be made), among Ausspitz' group of "Parakeratoses," as an "Acanthosis" depending on hyperplasia of the prickle layer. To his knowledge the case was then unique.

Janovsky suggests the possibility in the future history of the case of the supervention of the parakeratosis of a true epithelial proliferation, as in xeroderma pigmentosum.

XII. **Multiple Phagedenic Ulcerations of Doubtful Nature,** by Emile Vidal.—The patient was a native of Brazil, but at the age of twenty went to work as an agricultural labourer in the province of São Paolo. He was admitted to St. Louis Hospital, Paris, in December, 1888.

The family history revealed nothing of importance beyond the fact that his mother possibly inherited syphilis from her father, and that she died probably of cancer. Two of his brothers had suffered for a year from similar ulcerations, and one sister died at three years of age with extensive ulcerations. No tuberculous history could be obtained. The patient himself had always been healthy, though delicate when young, and never had syphilis.

The ulcerations commenced after eight years work in the boggy country of São Paolo, where such an affection was common, and from which his two brothers likewise suffered. He worked with bare feet, and the ulcers, according to his account, began as red pimples, which quickly ulcerated, and spread rapidly. Soon a central scar was formed, and round this the ulcer spread with uneven surface, and surrounded by a violet-red line. There was always a foul discharge. He had been treated at various hospitals without benefit. At the date of observation he was prostrate from long suffering, and getting rapidly thinner. There were ulcers on the left foot, both legs, both wrists, on the nose and right ear, and all of them, though varying in extent, had the same characters. There was a central scar, with radial cicatricial bands passing from it; round it was an uneven ulcerated surface, raised into papillomatous elevations in some parts, hollowed out in others. It had a well-defined indurated margin, pale in colour against a violet-red zone, about an inch to an inch and a-half in breadth, fading into the healthy skin. This margin was indented, elevated, and irregular, and in several places showed a thin red line, as seen in a phagedenic chancre.

The skin of the nose was indurated and violet-red, with ulcers covered with yellow scabs, and the auricle was in a similar condition, but the skin was much inflamed, the whole very like lupus vulgaris. The axillary, inguinal, and cervical glands were enlarged and indurated.

There was no sugar in the urine, the internal organs were healthy, and there were no signs of tuberculosis in the lungs.

Treatment by anti-syphilitic remedies produced a temporary improvement, soon followed by a relapse. During the course of treatment yellow-brown nodules, very like those of lupus vulgaris, were observed in the cicatrix of the ulcer on the left arm.

The mucous membranes became affected about the time of his admission to hospital. Over the right inferior turbinate bone the mucous membrane was infiltrated and granular. Over the palate, uvula, and the pillars of the fauces, there was an ulceration covered by a thick adherent yellow coating, under which the surface was red and granular, like a lupus ulcer. The larynx was normal, but between the trachea and pharynx the mucous membrane was covered by thick mucus, and was very sensitive, causing painful deglutition.

After a year in hospital the patient left in *statu quo*, and the buccal lesions were extending.

Diagnosis.—The authorities at St. Louis were divided in their opinion of the case. "*Syphiloma*" being excluded by lack of syphilitic history and failure of antisyphilitic remedies; "*diabetic ulceration*," by the absence of glycosuria; and "*phagedenic chancre*," by the absence of autoinoculation, the diagnosis lay between "phagedenic ulcer of tropical countries" and "lupus" in a phagedenic form. In favour of the first were the facts (1) that the ulcers were on exposed parts of a patient who worked barefooted in a swampy district where such ulcers were not uncommon; yet many Colonial physicians who saw him pronounced them unlike the common ulcers of hot climates, and no phagedenic bacilli were found, nor was inoculation successful in procuring phagedena (Boinet's test); (2) Dr. Nunez, of Costa Rica, recognised the ulcers as similar to those he had seen in Central America, produced by the sting of an insect (papolomoyo) and called "torrealba ulcer." It lasts for three or four years, unless treated, and never relapses. Dr. Juan Ugaz asserts that a similar ulcer, supposed to be caused by a butterfly, "la uta," endemic in the Cordelliere des Andes, and known as "la uta of Peru," is really a lupus, and the question is whether this and the torrealba ulcer may not be cutaneous tuberculoses, and certainly the histological characters seemed to point to the particular case being a rare and undescribed form of *phagedenic ulcerating lupus.* Darier's report of the histological characters showed that he had to deal with a granuloma, the elements of which tended to form nodules. There were many giant cells, the vessels were small and their walls hyaline, yet no bacilli were found, and experiments on animals produced neither tuberculoses nor phagedena.

XIII. **Xanthoma diabeticorum,** by A. R. Robinson. — This disease occurred in an American, aged thirty-one. His family and personal history were unexceptionable. He had never been ill, and all his organs were healthy, but for some time he had drunk a great deal of water, and there was 5 per cent. of sugar in his urine.

The eruption had lasted four months, and commenced by the appearance of twenty or thirty lesions on the gluteal and lumbar regions. They gradually increased in number, and appeared on the extensor surface of the forearms, especially about the elbows, the extensor surface of the thighs, calves, and shins, and, finally, over the whole body. The buccal mucous membrane and the penis never showed any lesions, and there was no special grouping.

At the date of observation (April, 1889) there were several hundreds of spots, with the above distribution. The eruption was not preceded by any subjective sensations, but was attended, when fully developed, by a burning, lasting for several hours, while sometimes there was great irritation. His sleep was not disturbed, but he had pain on turning round in bed, which made him restless.

The lesions varied in size from a pin-head to a large pea. All were firm, sharply defined, raised above the surface, and evidently localised in the corium, and most of them in the area of the hair follicles.

The small spots were acuminate and of reddish hue (due to capillary hyperæmia). This redness disappeared on pressure, and the nodules then appeared yellow, with a reddish periphery. The larger lesions were more rounded, with a smooth or uneven surface; others were flattish and obtuse, but all were raised above the surface, thus differing from xanthoma planum.

The irregularity of the surface of some of the larger lesions was due to the fact that several smaller ones had run together, the furrows containing capillary vessels, and each thus retained its yellow point and red periphery, the yellow point being revealed by pressure. These abscess-like tubercles were all firm and solid.

The urine contained 5 per cent. of sugar but no albumen. Diabetic diet and Fowler's solution were prescribed, and in three weeks the spots began to disappear. In two months the diet was abandoned, the sugar increased, and yet the eruption continued to disappear.

The sugar had quite gone in six months, and all treatment was omitted, but the condition relapsed to be again removed by a resort to diabetic diet and Fowler's solution, in a month's time, and since then there has been no return.

The only traces of the eruption to be seen were slight hypertrophic cicatrices on the site of the lesions, especially on the buttocks.

XIV. **Hyperkeratosis Striata et Follicularis**, by H. von Hebra.—This disease is a hyperkeratosis, having its origin in the hair follicle, or its surroundings, dilating the follicles into a funnel shape in which the hair is coiled up, being prevented from protruding by the horny accumulation.

The patient was a Hungarian woman, aged twenty-four, married, with one child, aged eighteen months. She had always been healthy, and never had any chronic skin disease. The eruption commenced in her first pregnancy, disappeared in three days after her confinement, to reappear after three weeks, and had never disappeared since, remaining in *statu quo*.

The hair was black and very dense, the skin of the head white, without any desquamation.

The disease was distributed over the body, slightly on the face, over the eyebrows, nose, and upper lip (there was some conjunctivitis and blepharitis) on the neck and shoulders, slightly over the back and abdomen. It was most extensive over the arms about the elbows and on the right knee.

The eruption consisted of epidermic masses of a grey-green colour, flat or elevated, isolated or confluent. Each grey-green mass when separated was cone-like, occupying a funnel-shaped depression, in which lay coiled up a hair. The depth of these depressions varied; some (over throat and shoulders) so superficial that no hæmorrhage attended their removal; some so deep (over extensor surface of elbow) that there was hæmorrhage from both superficial and deep layers of the corium.

Over the flexor surfaces of the elbows, the eruption occurred in streak-like elevations (one c.m. in breadth, several in length); grey-green in colour; composed chiefly of horny epidermis with only slight admixture of dried serum. Some difficulty attended their removal, and hæmorrhage occurred both from superficial and deep layers of the corium. On the removed mass there were elevations corresponding to pits in the "papillary body."

The streaks faded away towards the shoulder, where they were shorter, more superficial, and resembling psoriasis scale. There was no itching or other subjective sensation. The elevations seemed to arise spontaneously, and not to be due to scratching, but it is difficult to explain why they should have spread thus over a part devoid of hair follicles.

The process started from the epidermis, and the changes in the papillary layer were due to pressure of the cones.

Warm baths, with soap, resorcin vapour applications, and later, salicylic acid plasters, effected a cure in about a fortnight.

XV. **Multiple Benign Tumour-like New Growths of the Skin,** by E. Schweninger and F. Buzzi.—The patient was a woman aged twenty-nine. The disease had lasted eight years, and had not interfered with health.

The growths were distributed over the upper part of the back, chest, and arms. They were irregularly placed on the chest, but on the back were grouped over the spine, and extended laterally in lines corresponding to the natural furrows of the skin. *In size* they varied from that of a lentil to a sixpence, with a rounded contour, mostly circular in shape, but oval over the sides, the long axis being directed towards "the lines of cleavage." *In colour* they were bluish-white; the dilated follicles appeared as black points, and the hairs were as well developed as on the sound skin. On some there was a delicate vascular network, and they were depressed instead of elevated. The smaller ones looked like vesicles, the larger like withered bullæ. They were only slightly elevated above the surface. Stretching the skin caused them to disappear, and left only a whitish mark, and where the skin was loose they could be pressed into the subcutaneous tissue, leaving a shallow pit, but they reappeared again like an umbilical hernia on removal of the pressure. The smaller certainly grew into the larger elevations, and in extension they became flatter, whiter, and harder. None exceeded 2 c.m. in breadth, and on reaching this they underwent involution.

There was neither pain nor tenderness, and tactile sensibility was normal.

The *treatment* proved fruitless; resorcin and salicylic plasters were ineffectual. Paquelin's cautery partially removed them, but after nine months they had reappeared and many new ones had formed.

Histology.—The chief change was in the elastic tissue of the skin. The tumours were not incapsuled, but definitely marked off from the surrounding skin, which showed an increase and thickening of the elastic tissue, while in the formation itself it was represented only by delicate ramifying fibres. Thus there seemed to be "atrophy by retraction" of the elastic tissue—and wherever it was absent—as round the adventitia of the vessels, round the sebaceous and sweat glands and hair follicles there was small celled infiltration and proliferation of the intima of the vessels, and here and there the formation of new capillaries like minute angiomata. The sebaceous glands showed new acini, containing "young cells with large nuclei, nuclear corpuscles, unigranular protoplasma, and a few flat globules," and these enlarged glands in some cases formed the greater part of the tumours. The follicles contained several loose hairs in addition to the one attached to the papilla. The connective tissue of the corium was not increased, but its fibres were loose and flabby from the loss of elasticity. The papillary layer was flattened, the epidermis thin, and pigment diminished. These facts pointed to the conclusion that the process was not one of degeneration of the original elastic tissue, but of a mechanical retraction by tearing or otherwise of the elastic fibres, which had accumulated in the surrounding tissue. The static balance had been disturbed, and the simple elements could not develop until it was again restored, and so there was small celled infiltration.

The remarkable fact about this case is that without any local disturbance of circulation we have a primary passive change in one tissue leading to an active change in another, in a manner hitherto unknown, and in this connection is interesting, both physiologically and pathologically.

XVB. **A Case of Circumscribed Dermatomycosis of the Hand,** by N. Mansouroff.—The subject of this disease was a girl, aged eighteen, who consulted Dr. Mansouroff in September, 1888. It began by the appearance of some dry whitish papules near the nail of the left thumb; these became vesicular for a few days only, and there was a good deal of irritation. By the end of a month the eruption had spread to all the fingers, and presented an ovoid shape with serpiginous margin. At the end of two months the skin over the extensor aspect of the left thumb was red, shining, and covered with dry scales; the edges were raised and well defined, consisting of thick layers of epidermis. There was irritation, but no pain.

Potash soap for washing, and red precipitate ointment (2 per cent.) rubbed in twice daily soon effected a cure.

The characters of the eruption, its manner of spreading, and the marked desquamation at its borders, suggested its being due to an organism.

A large number of mycelial threads were found between the layers of the epidermis. The author, as well as Professor Sorotrine of Kasan and Dr. Basil Kriloff, examined the fungus by microscope and cultivation. It had the following characters :—The threads were grouped into a colourless mycelium, which was not branched. The threads were arranged parallel to one another, sometimes twisted, sometimes winding round the epithelial cells or passing through their centres. The spores were scattered, not grouped, and, if massed, were arranged in chains. The threads, which readily lost the staining material, spread horizontally, were generally spiral, and, when separated, they varied from 1 to 3 micromillimetres in breadth. They were jointed, the segments being square, two or three times longer than they were broad, the joints being formed by a membrane with fine granular contents, and each with one or two spores. When two, the spores were at each end of the segment. The young filaments were delicate, while the older were thicker and consisted of square cells. Many threads consisted of membrane only, with one or two light spots (spores), each such thread consisting of little pouches drawn out at the ends and jointed end to end, and never branching. The chains would not grow on agar-agar, but cultivation on gelatine showed both chains and threads, and, after a few days, rod-like bodies appeared, made up of two or three bacilli which had separated. In blood serum all the stages developed, and in an old cultivation there were to be seen large forms, as in a fresh cultivation, viz. :—

(1) Oval corpuscles separated or arranged in chains; (2) small rods; and (3) thick threads.

The parasite thus closely resembled the tricophyton, though it could be distinguished from both T. tonsurans and achorion Schönleinii both by microscope and cultivation. It was placed in the group Typhomycetes.

Clinically, the dermatomycosis is closely allied to "eczema marginatum" of Hebra, "herpes tonsurans," and the special variety described by Dr. Robert Campana of Genoa, the "tricophytosis dermica."

XVI. **Erythema gyratum perstans in the Two Elder Members of a Family,** by T. Colcott Fox.—The two patients were aged respectively, E. W. T. nineteen and a-half, and Sarah Ann T. eighteen years, and had suffered from the disease since its onset, in each case about the age of three or four years. They had never been entirely free, but were subject to exacerbations. There were five other children, all healthy. There was no history of syphilis, though the first fruit of the marriage was a miscarriage, and both the elder children were stunted physically.

Both had numerous teleangiectases over their faces. The boy had infantile paralysis of one leg when ten months old; one brother had erythema multiforme during acute rheumatism, otherwise there is nothing to throw light on the case in the family history.

The attacks were similar in both, but the exacerbations were more acute in the lad.

The eruption began by the evolution of scattered, isolated, slightly raised, erythematous papules, about the size of a millet-seed, temporarily effaced by pressure and intolerably itchy. The papules quickly extended centrifugally, the central hyperæmia subsided, and in a few hours there was a central area of pigmented, but otherwise normal skin, ever enlarging *pari passu* with the narrow, raised, rosy red erythematous border. Desquamation was so rapid that there was only a narrow white cuticular fringe adherent to the inner edge of the border, and this fringe was exceedingly characteristic. These circles, as they enlarged, fused with one another, and so formed festooned figures, covering a large area. After a few days nothing remained but a degree of pigmentation.

Such attacks were non-febrile, and occurred at least once in three months, lasting from ten days to six weeks, the greater part of the trunk being attacked, especially the extensor surfaces.

Between the attacks, the papules were being continually evolved over the shoulders, thighs, buttocks, and popliteal spaces. The palms, soles, face, neck, and scalp *always*, and the dorsal surfaces of the hands and feet *generally* escaped.

The patients associated the attacks with climacteric changes, for they were more frequent in spring and autumn, and were less severe in winter. The lad noticed that the eruption might start from a scratch or cut, and certainly followed any irregularity of living.

The patients had been under observation since 1880, and the eruption had never varied in character, only in degree of intensity.

The lesion was always a miliary macule or slightly elevated papule, and only the superficial layers of the skin were affected, with the single exception that, during a severe attack in the male patient in 1883, the borders of the eruption were vesicular, like a dermatitis herpetiformis. The mucous membranes were never affected.

Both patients were quite healthy, and have married since 1880, their children are healthy, though one child of the female patient had eczema and one died of meningitis.

Treatment.—All drugs and dieting failed to cure. Relief was given by various soothing and antipruritic lotions. A section of the skin was not obtained, and no fungus was discovered.

The author thinks the cases unique—the type always remained constant, always macular, only once going on to vesiculation. It closely resembled a superficial form of erythema multiforme, the roseola of Willan and Willis, the pityriasis maculata et circinata of Duhring, and has a close resemblance to the affection of the tongue called "geographical tongue." He at first regarded it as an exceptional phase of erythema multiforme, but its chronicity is against this view. It was like acute general urticaria, but he never observed any urtication. Although one type was strikingly maintained, there was some degree of multiformity—round rosy desquamated macules and scaled areas, like a drying up dermatitis herpetiformis, leaving deeply pigmented areas. This multiformity, the instance of vesiculation, and the extreme chronicity might suggest dermatitis herpetiformis in a stereotyped erythematous stage, but no cases seen by the author or described by Duhring or Brocq are quite similar.

There was a certain resemblance to tinea trichophytina of the tropics, but no fungus was found.

XVII. **Anomalous Discoloration of the Skin and Mucous Membranes,** by Mitchell Bruce.—The patient was a harness maker, aged forty-seven, admitted into Charing Cross Hospital in November, 1890. The discoloration of the skin which resembled that produced by silver, or by cyanosis, affected the body generally, but the face, hands, and feet particularly. The conjunctivæ, as well as the nasal and oral mucous membranes, were similarily affected.

The skin felt warm, and pressure did not influence the discoloration.

The patient complained of intermittent pain of a burning or shooting character, especially in the hypogastric and lumbar regions. The general health was good, motion and sensation normal, and careful and repeated examination revealed nothing abnormal in any of the thoracic or abdominal organs. The urine was not disordered. The body temperature varied from 96° to 98° Fah., usually not exceeding 97°.

The blood contained 65 per cent. of hæmoglobin, and 3,090,000 red blood-corpuscles per c.m.

The pains and discoloration had commenced two years before admission, and since then the tint had deepened. He remained under observation for three months without any obvious change in his symptoms.

Nothing in the patient's occupation accounted for the condition. A year and a half previously he had taken medicine for his pains, but its nature could not be discovered. He had suffered from syphilis.

XVIII. **Trophic Ulcus—Syringomyelia,** by L. Jacquet.—The patient was twenty-nine years of age, and was admitted into the hospital of St. Louis, under M. E. Besnier, in March, 1886.

There was a distinct tuberculous history, but none of syphilis.

He stated that while in Algeria in 1883, he had been bitten by a scorpion in the right hand, the arm became red and black, and much swollen. His middle finger was amputated, and amputation at the shoulder had been considered. His recovery was slow, and, soon after, he began to suffer from pains radiating from the cicatrix in his hand, passing up to the shoulder. They were deep as if seated in the bones, were compared to "barres de feu," and being frequent at night, were severe enough to cause insomnia. Almost simultaneously similar pains commenced in the right occipito-parietal and cervical regions, originating in the neck, not radiating from the arm. Two years after the operation, his health in the meantime remaining good, a small sore appeared on his right ear. This formed an ulcer in two days which spread over the outer surface of the auricle. This cicatrised, but again opened, and new ulcers appeared on the right occipito-parietal region, the ulceration being preceded by severe pain. Since then ulcers had succeeded each other continually, for which he had been treated ineffectually in many hospitals.

At the date of observation the ulceration and resulting cicatrisation were restricted to the right side—(1) on scalp and neck and below the clavicle, a region corresponding to the distribution of the cervical plexus; and (2) on the dorsum of the right wrist. The ulcers were irregular, not punched out, and not excavated, there being no loss of substance. The skin was infiltrated. The patient had a cough, respiration was rough over the apices, and he was losing flesh. There were no traces of syphilis, but the glands in the groins and axillæ were swollen. The spleen was normal.

The pains were as described, there were no painful neuralgic spots, and pressure on the nerves caused no uneasiness. The sense of touch, of pain, and of temperature was lost over an area corresponding to whole right side of the neck and scalp, and the shoulder from the sternum to the spine, and the whole right arm; elsewhere it was normal. Muscular strength was diminished, but there was no atrophy. A fold of the skin could be pierced without drawing blood.

Under treatment the ulcers cicatrised, an erythema developed over the whole pectoral region, but no vesicles or bullæ formed. The ulcers could be produced at will, as by the application of acetic acid. There was abnormal mobility and crackling in the joints. The further history was lost owing to Jacquet losing sight of the patient, but he ultimately obtained a *post-mortem*, at which the spinal cord was found to be affected.

There was an irregular cavity along the whole length of the cord, situated in the grey matter, and best marked in the cervical region, where it had destroyed most of the posterior grey cornua. There were several smaller cavities in the anterior horn, and many of the nerve fibres round them were degenerated. The central canal was not interfered with. The peripheral nerves showed no change.

Further details need not be given. The nature of the case was at first doubtful, but when syringomyelia was described in 1889, the author concluded that his case was an instance of that disease, and considered that the scorpion's bite corresponded to one of the whitlows which occur in syringomyelia.

The ulceration is an instance of a trophic lesion due to central changes.

XIX. **Canities unguium,** by S. Giovannini.—The patient was a coachman, aged twenty-nine, and was of robust appearance.

The nails of his hands showed in their entire extent a white, opaque, almost ivory colour, those of the thumb and index fingers having the colour to a more marked degree than the others. The nails were otherwise normal, both in polish and regularity. The hair was luxuriant, dark chestnut in colour, with no white or grey hairs in any part.

The disease commenced when he was twelve years of age, after typhoid fever, and since then the colour had remained without modification, though the growth of the nails had always been regular.

Histology.—A section of the nail showed, by transmitted light, dark spots, isolated or confluent, diminishing in number towards the ends and sides of the nails. By direct light their area appeared shining, and were evidently air spaces. Sections prepared to show the cells, revealed no abnormality in them.

The appearance of opacity and whiteness was due to the presence of these air spaces, and they were probably due to some abnormal process of keratinisation. The disease was analogous to, though it must be regarded as distinct from, the white spots and lines seen on deteriorated nails, on account of its universality and persistence.

It must, therefore, be regarded as a distinct variety of leucopathia, and the author thinks the name canities unguium appropriate, on account of the fact that the abnormal entrance of air into the hairs is one of the recognised causes of canities, just as it was seen to do in the case of the nails in this instance.

XIXb. **Leukonychia and Leukotrichia,** by P. G. Unna.—The patient was a joiner, aged twenty-six. The change in the nails was first noticed in childhood, indeed it was thought to be congenital. The only change that had ever taken place was that, after an injury to two fingers, their nails became red, but afterwards returned to their white colour.

The disease caused no inconvenience, except some discomfort on paring, but this was unnecessary, because the nails were so soft that they wore off as they came to the finger points. There was no inflammation. The hair was always normal, and the patient never had any disease likely to result in loss of hair.

All the nails were opaque and white, with a posterior bluish-white zone, and an anterior yellowish-white chalk-like zone. The posterior zone extended to the middle of the nail, and on some nails there were transverse darker streaks indistinctly marked. The anterior zone varied in breadth according to the degree of detachment from the nail bed. It was also crossed by darker streaks, alternating with the chalky parts, and longitudinal lines joined these darker bands, which were brownish-red and more transparent, allowing the blood to shine through, while the chalky parts were due to the abnormal presence of air, the air spaces having a radial and transverse arrangement up to the posterior blue-white zone. The nails were soft and brittle, flattened, but smooth, and not grooved. The hands were blue as if cold, but there were no chilblains. The toe nails were normal. As to the hair, there were many hairs grey, dry, and brittle, among the fair ones, but they were strong and healthy even to the root. They were also lustreless, and showed rings of white from 2 to 3 mm. broad, but not sharply defined, and without any variation in the diameter of the hair to correspond. A section of a nail showed communicating air spaces, but the nail cells were normal and not increased in number, and there was considerable hypertrophy of the subungual horny layer, which projected from under the free border as a thick mass, instead of the thin fringe as seen in normal nails.

While the appearance of the anterior zone was accounted for by the air spaces, that of the posterior zone must be referred to a change in the nail cells themselves, and Unna thus interpretes the condition. The nail cells being abnormally soft and moist, the older cells at the free edge shrink from loss of water, the nail becomes porous, and air is admitted into the spaces, the breadth of the zone corresponding to the degree of detachment of the nail in this skrinking process.

The white rings on the hair were due to the hair tissue being porous and filled with air. The medulla was most porous, and the spaces extended radially into the cortex. The air in the medulla caused no expansion of it at the expense of the cortex, nor was the shaft expanded at any part. This would tend to prove that it was not a primary development, but the formation of spaces due to the shrinking of soft hair cells. The regularity excluded the idea of its being due to varying functional activity. Unna objects to the name canities adopted by Giovannini, on the ground that that term refers to a senile change involving the pigment. There is no pigment in the nails, and besides, there is no primary change of texture of the cells, and no secondary infiltration of air, as in these cases; and also because the hair was affected by an analogous disease to which the name canities was not applicable.

XX. **Chronic Perforating Farcy**, by Ernest Besnier.—A slow and chronic form of glanders, such as seen in this case, with ulceration of the face, but without the acute manifestations of the disease as lymphangitis, gangrene, coryza, nasal discharge, &c., and associated with good health, and no septic pyrexia, has not, according to Besnier, been described, though he holds that it is not rare.

The patient was a groom, aged twenty-five, and the disease was of three years' duration. The first manifestations were in the lungs, but after eighteen months all pulmonary symptoms became latent, and no nasal lesion either preceded or succeeded the lung infection. At the end of the third year a farcy bud appeared on the left forearm, opened spontaneously, and healed in three months, leaving a scar adherent to the skin, very like a syphilitic scar. At this time, three months before entering the hospital, in May 1890, the lesions on the face commenced. It is to be specially noted that no nasal lesions were ever present.

(1) The lesions of the skin were characterised by infiltration, ulceration, and erosion. They were situated over the central part of the face, on the dorsum and root of the nose, a great part of which was destroyed, and on the right lower eyelid. The upper lip was excavated so as to resemble hair-lip, leaving bare the gum and incisor teeth. From the lip it extended to the cheeks, and between the teeth to the palate, including the velum, but not extending to the pharynx proper. Everywhere the lesions were placed on an infiltrated, red, livid, soft base, with raised edges, gradually passing into healthy skin. On this base the small farcy buds (about the size of a lentil) appeared, showing as yellowish points on the livid surface. These softened and broke, exuding a purulent, but slightly coagulable fluid. The spots enlarged rapidly, with irregular edges, and then ceased to grow, but the ulceration spread insidiously under the margin, forming cratiform ulcers with undermined edges. Several of these might run together and cause great loss of substance, as on nose and upper lip.

The destructive stage was followed by a reparative one, and while the ulcer still exuded the characteristic pus, the edges were cicatrising, and this gave rise to a characteristic surface dotted over with nipple-like elevations of various shapes and sizes, producing a granular and jagged aspect as if worm eaten.

Everywhere the two processes co-existed. The disease spread over the affected area in five months, and during the succeeding ten it spread little, but continued characteristically proliferating, destroying, healing, and ever extending deeper.

On the mucous membranes the disease occupied the whole palatal arch, and had destroyed the velum. There was a soft red base with depressed cicatricial points, forming cup-like depressions, about 1 to 5 mm. in diameter, filled with adherent yellowish pus. Here and there were polycylic ulcers formed from the union of several neighbouring depressions. There was no active growth and no pain, dysphagia, or salivation.

Visceral Lesions.—Heart, lungs, and spleen were normal, liver slightly enlarged, and there was albuminuria, finally oliguria and uræmia. There were no joint changes.

Before death there was melancholia with adynamia, and depression, and the patient died from the toxæmia of glanders and uræmia.

Post-mortem.—The lungs were emphysematous in front, congested at the bases behind, but neither in the lungs nor anywhere in the respiratory tract were there any miliary granulations, glanders, or tubercles. The liver was fatty and "nutmeg," but showed no miliary granulations. The kidneys were large and soft, with red stellate spots below the capsules. The brain was congested. The peritoneum and mesenteric glands were healthy; the spleen weighed 105 grammes, but was otherwise healthy, and the testicles were healthy.

The *diagnosis* was sufficiently clear when the characters of the lesions and the patient's occupation were determined. The scar on the arm was not unlike syphilis, but antisyphilitic remedies failed. The profuse continued suppuration, &c., excluded lupus, the softness, &c., epithelioma; but bacteriological investigation settled the diagnosis, for inoculation of an ass and a guinea pig produced farcy in each case. The author refers to the researches of Saint Cyr, Hertwig, Galtier, and Straus, with regard to inoculation. He draws attention to the fact that farcy can be produced locally on the skin of a dog, and the characteristic bacilli obtained without destroying the animal, and that it can be readily produced in the guinea pig by inoculation of the peritoneum and strongly urges the application of this test, in the early stages, as it is of the utmost importance to treat the local lesions before visceral complications set in, as they had done in this case, thus rendering treatment hopeless.

XXI. **Syphilitic Cutaneous Horns,** by Georg Lervin and J. Heller.—The patient was a manservant, aged twenty-eight, admitted into the Charité Berlin in November, 1891, with wart-like proliferations on his palms and soles, which kept him from working.

Evidence of syphilis was found in a pigmented scar on the "sulcus coronarius," the inguinal and axillary glands were swollen and hard, and on the skin of the thorax and abdomen were ulcerations, undoubtedly gummatous, but there was no falling of the hair, leucoderma, or mucous plaques.

On both soles there were yellow-grey warty growths, horn-like, translucent, and brittle, and not unlike a large rupial scab; an ulcerated surface was left on their removal. There was no pain and tenderness except on pressure.

On the palms there were similar horn-like excrescences, one on the left, two on the right, near the roots of the fingers. The largest was $1\frac{3}{4}$ c.m. in height, about ·6 c.m. in breadth at the base. Their surface was rough and irregular, and their substance brittle. They were surrounded at their base by a callous thickened wall of epithelium, while immediately on the horn itself was a similar thickening, in which the horn was set, like a candle in its candlestick, and, like it, slightly movable. Pain was elicited only on pressure. There was no inflammation.

Mercurial injections soon effected a cure; the horns fell off, leaving a cicatrised surface covered with young epidermis, and the wounds gradually disappeared.

Anatomy.—Only the horns were examined, the processes in the skin leading to their formation were undetermined. The horn consisted of elongated, more or less cornified cells, arranged in parallel rows at the base, but obliquely and perpendicularly in the shaft, and here and there, especially at the base, were alveoli containing large cells, the nuclei of which were stained, while those of the cornified cells were unstained, the whole cells staining diffusely. No other element, and no vessels could be seen.

Two points were to be noticed—(1) That the area of increased activity of the rete cells was not uniform as in an ordinary corn, but unequal, hence the horn was tilted to one side, or twisted on itself. (2) That the process of cornification was irregular, leading to the formation of alveoli, with uncornified cells, a fact which might be taken as pathognomonic, and analogous to the irregular ossification at the margin of the epiphyses in syphilitic children. In the literature of horns, to which the author refers, there is no history of horns occurring on the palms and soles, and nowhere is syphilis mentioned as a cause.

XXII. **Keratosis follicularis contagiosa,** by H. E. Brooke.—This affection, though rare, has been described by several authors—by Cazenave, followed by Hardy and Guibout as "acné sebacée cornée"; by Leloir and Vidal as "acné cornée"; by Wilson as "ichthyosis sebacea cornea"; and by Lesser as "ichthyosis follicularis." It has also been called "lichen spinulosus." The author follows Morrow in calling it keratosis follicularis as best descriptive of its pathology. Kaposi, in 1889, described a disease under that name, in which there were thickened clavus-like masses of epidermis on the soles and palms, but these did not occur in those cases. Besnier uses the title "angio-folliculite-kératosique simple," but the vascular changes are only secondary. With true lichen pilaris and cacatrophia folliculorum of Tilbury Fox, this condition has nothing in common. The contagious element has not hitherto been observed. In the author's cases, six children out of a family of seven who slept in the same room, and used the same towels and brushes, were affected within a few weeks—and three members of another family were affected, one after the other, but in a third family only one member showed the eruption. In none was there any departure from health.

In all, the type was the same, varying only in extent and intensity. The first appearance was that of black spots, gradually rising into papules, and the whole affected area became dirty-yellow in colour. The black spots began to project, and comedo-like plugs, and small spine-like growths, were produced on the apices of the papules.

In the case illustrated in the atlas, the eruption appeared at the nape of the neck and spread over the shoulders to the outer part of the arms, then it appeared on the front and outer sides of the thighs, the sequence of spots, papules, brown pigmentation, plugs, and spines, being always observed.

Some papules showed subacute inflammation, but it had no necessary relation to the size of the papules, nor were these proportional to the size of the spines.

On the neck the spines were like fine bristles, on the arms like horny plugs, both were hard and firmly rooted, free from grease, and like particles of dry mortar. The surface felt like a nutmeg-grater after their extraction, a gaping follicle was left.

The larger papules were fleshy, and when inflamed sometimes looked like old acne spots, others which were of larger development more like minute acuminate warts. They took on a dirty yellow colour which extended to the surrounding skin, and so the affected part looked dirty, especially when the papules were collected to form lumpy patches.

The disease spread later over the whole body, the scalp and abdomen alone remaining free.

Treatment.—All the patients were treated with mollin (lard saponified by caustic potash, to which some fresh lard and glycerine are added, but which nevertheless always contains traces of free potash), and this sufficed to effect a cure.

Pathology.—The disease is essentially a hyperplastic growth of the epithelial cells, combined with a modification of cornification, which enables them to retain their vitality for a longer time than usual, and to remain adherent. The exciting cause acts from without and penetrates inwards. The common follicle of hair and sebaceous gland is the chief seat, though the sweat ducts and the deeper superficial furrows were also affected by the keratosis. First a comedo-like plug is formed in the mouth of the follicle, which dilates under the pressure of its growth. The pouch thus formed is lined by cells lying concentrically, and in the centre the weak new hair lies coiled up. The plug then rises out of the follicle as it is gradually added to, and retains the shape of the pouch, and so looking like a series of superimposed cups. The apex is dark, the base light, due to the cells retaining vitality, probably because of the want of oxygen at the bottom of the cup. The nuclei stain deeply some distance from the base.

As the process proceeds the pouch elongates, but also becomes broader at the base, and being thus less capable of penetrating the corium, it drags up the epithelial layer round its mouth, and so forms a papule, as is proved by the elongation of the cells forming its sides. In some cases this is assisted by exudation of inflammatory cells round the vessels, but this seems due to the irritation of the new growth. The hyperplasia affects all the epithelial layers.

The author does not agree with Robinson that the process begins in the sebaceous glands, but holds they are only secondarily affected, and thus the term acne is inappropriate.

The contagious nature of the disease, its resemblence to Darier's "psorosperme folliculaire végétante," and the fact that White found psorosperms in a case previously classed with Morrow's cases suggested the presence of psorosperms, but none were found, and no kind of micro-organism could be discovered.

XXIII. and XXIV. **Two Cases of "Psorospermosis follicularis vegetans,"** by J. Darier.—The patients were a woman, a seamstress, aged thirty-five, and a man, a bookbinder, aged forty-five, both at various times in St. Louis Hospital.

Both were weakly and strumous, neither had had syphilis, nor was there any special hereditary taint. Both had reached adult life before the disease commenced. It was extremely chronic, not attended by any subjective sensations, and developed insidiously. It first attacked the chest and anterior aspect of the trunk, and attained its complete distribution in a year. It had since remained unaltered by any form of treatment. There was no evidence of disease of any organ. The wife of the second patient remained free from the disease after seven years of cohabitation.

The disease in both cases had essentially the same distribution, but the lesions in the man were much more extensive. It affected the (1) scalp and face, being confluent on the scalp, the temples, forehead, chin, and naso-labial furrows; (2) the trunk, being confluent over the sternum, the axillæ, round the waist, and in the groins, in the centre of the back, and the intergluteal furrow. Elsewhere it was discrete, and in the man's case it extended to the dorsal aspect of the limbs.

Between the lesions the skin was pigmented and congested.

The primary lesions were the same in both:—1. A papule covered by a crust, which was brownish or yellowish and irregular. It was thickest in the centre, and projected 3 or 4 mm. above the surface like a little horn. In some places the papillæ showed central brown masses like comedones. The crust was very adherent, but, when separated, it left a depression into which it fitted by a softish prolongation of yellowish colour and looking like sebum. On hairy parts the hair sometimes, but not always, perforated the crust.

The depression had a raised papular edge of rose-grey colour, and seemed to correspond to the dilated pilo-sebaceous follicle.

2. Some of the lesions were broader and less prominent. The brown crust was more adherent, and, when detached, the plug was less defined and the edge of the depression less raised.

3. In some parts the lesions were confluent, forming brown, rather fatty-looking plaques. Their surface was irregular, corresponding to the papules and crusts of which the plaque was made up, and dry, giving the sensation of a rasp. The surface below the crust was red and pitted, and exuded serum but no blood.

In the man hypertrophic lesions had developed over the pubic region in the form of mulberry-like tumours devoid of crust, and bright red in colour covered with crateriform orifices.

The odour from the skin was mawkish and very disagreeable.

The hands were affected in a different manner. On the dorsum were flat warts, which the woman said had at one time been covered with crusts, and on the palms, and also on the soles of the feet, the papillary lines were distorted by small thickenings of the horny layer, which studded the surface as minute semitransparent yellow points. The nails were brittle and longitudinally streaked.

Histology.—The lesion first affected the follicles and then extended to the surface epidermis.

The deep part of the follicle, the hair, its sheath and sebaceous gland were normal, the outer part was dilated into a funnel-shaped depression filled with horny material.

The stratum granulosum was prolonged into the follicle at the bottom of which it was broken up. The Malpighian layer was also broken up, and its interpapillary parts irregularly prolonged into the corium in which the vessels were dilated and surrounded by round cells.

In the broken-up layers were round bodies about the size of an epithelial cell, with nucleus, granular protoplasm, and a capsule of double contour ; here and there were spaces out of which these bodies had fallen. In teased out preparations these were seen to occupy the interior of epithelial cells, the nuclei of which were pushed aside. As the bodies moved out with the cells they lost their capsule and nucleus, and they were transformed into highly refracting round or oval grains, forming a large portion of the horny plug and crust.

The tumours showed a great excess of the interpapillary epithelial proliferation forming a papillomatous mass.

Darier thinks that these bodies are psorosperms, on account of their appearance, and the reaction of the epithelial structure which is similar to that seen in coccidiosis of the rabbit's liver—molluscum contagiosum—and certain epitheliomata.

M. Mallassez and Prof. Balbiani confirmed his view. Two objections may be stated—(1) The bodies may be due to degeneration, or to premature cornification, this tendency to keratosis being seen in the presence of the warts on the hands ; (2) clinically it is not contagious.

Darier holds the keratinisation to be secondary, but admits that he cannot trace the whole life-history of the coccidia-like bodies, and that he has failed either to cultivate the coccidia or to transmit the disease. He holds that many cases of keratosis follicularis are cases of psorospermosis.

Treatment.—Remedies to reduce the horny masses and parasiticide applications failed to relieve.

XXV. **Two Cases of Darier's Dermatosis,** by E. Schweninger and F. Buzzie.—Under this title the authors describe two cases of the same disease described by Darier as a psorospermosis.

The description of the lesions and their distribution is very similar to that of Darier. The head in both cases was the seat of seborrhœic eczema. They describe papules of the same size—the same coloured crusts, and sometimes comedo-like plugs ; the same depression when the crust is detached; the same hyper-pigmentation. They could not, however, limit the lesions to the follicles, and only rarely was a hair seen piercing the crust. They noticed occasional vesiculation. The dorsum of the hands was affected in the same way as in Darier's cases, in one case, but in the other the eruption had the same characters as elsewhere.

In one of their cases the disease spread by separate outbreaks of efflorescences, and, while she was in hospital, they had the opportunity of observing the evolution of the lesions, which took six weeks.

The efflorescence appeared, with severe itching, as a red spot about the size of a lentil, at the centre of which a somewhat transparent rounded elevation quickly formed, at first broad; it soon became acuminate, like an acne pustule, but never purulent; on pressure, a clear fluid, followed by a larger drop of blood, was expressed. The redness disappeared slowly, a crust formed, while a grey or brown discoloration and a hardening of the nodules took place; a grey scab sometimes separated from the apex of the papule.

They also observed the formation of isolated vesicles both on the new patch and between old patches on the abdomen.

One of their patients ultimately died in an asylum. Nothing beyond the skin affection was found at the *post-mortem*.

Histology.—The description of the microscopic anatomy is very elaborate.

The total result as summarised is—1. Chronic inflammation of the cutis, with hyperplasia of the papillary body and abundant formation of pigment which migrates from the affected parts into the neighbourhood.

2. Chronic inflammation of the "rete," partly formative, partly degenerative in character, resulting in hyperplasia of all the layers of the rete.

3. Consequently, also hyperplasia of the granular layer, at some parts, however, of a paratypic character.

4. Great disturbance of the process of cornification with hyperkeratosis, and especially parakeratosis.

5. Peculiar coccidia-like bodies in all the layers of the epidermis, but not in the cutis, either extracellular ("grains") or intracellular ("corps ronds").

6. These "corps ronds" pass like the rest of the rete cells through a more or less complete cornification.

They found that the seat of the horny pegs was not confined to the follicles, but as commonly affected the orifices of the sweat ducts, which in many places were dilated into cysts which contained granular contents and coccidia-like bodies.

The authors incline to the view that the round bodies are not intruders, but that the grains are degenerated rete cells, and the round bodies are the result of an endogeneous cell formation.

All attempts at cultivation and transmission failed. As to classification they think that while clinically the disease resembles ichthyosis, pathologically it has affinities to molluscum contagiosum, and even to epithelioma, and they would suggest the name "epithelioma miliarium keratogenium," on the assumption that the inflammatory phenomena were proved secondary. The name Darier's dermatosis does not prejudge the nature of the disease, in the absence of the facts necessary to prove its true nature.

Treatment.—The lesions always reappeared in spite of treatment to lessen the horny masses. Unna's sublimate-carbol ointment, salicylic acid, and fluid alkaline basic soap, seemed to be the most efficacious of many remedies tried.

XXVI. **On a Special Variety of Malignant Pemphigus**, by V. Babes.—As introduction Babes states his impression that an eruption of bullæ may be the expression of several and different morbid states. At the same time, that a strictly localised pemphigus exists cannot be denied, but he is at a loss to name a case which relapsed several times, then became general, and proved fatal. He cites a case, which seemed to him transitional between true pemphigus and a localised form of infectious nature, in which bullæ appeared about the nose and mouth, the contents of which contained a streptococcus as a pure culture, although there was no fever and no inflammation. There were no buccal lesions, and rapid recovery took place. As this could not be referred to erysipelas, he thinks it points to the parasitic nature of certain forms. In proof of this supposition he points to the infectious character of some cases of pemphigus of the newly-born, while others equally acute recover and remain sporadic, as in a case in which no cultivable microbe was found in the bullæ. This child was born in a malarial district, and had had intermittent fever, but as no malarial organisms were found in the blood, this could not be assigned as the cause.

As having some bearing on the special characters of his two cases of malignant pemphigus, he next cites a case of malignant variola, in which, as a complication of an already contagious disease, an eruption of bullæ appeared on the extremities. There was gangrene of the pharynx, larynx, and bronchi, and, at the autopsy, hæmorrhagic lesions were found in the organs, and great softening of the spleen.

The organism was invaded by a streptococcus and a slender bacillus, with which was associated an encapsuled microbe belonging to the septic organisms of the saliva, which had not hitherto been described as being found in the pustules of variola.

Inoculation of the bacillus into the ears of rabbits caused inflammation of the serous membranes and of the lungs, and Babes looked on the bacillus as causing or aggravating the septicæmia. The bullæ could not be reproduced by the inoculation of these septic organisms, so he was unable to determine the question whether the bullæ were caused by the organisms found therein, or due to a peculiarity of the skin of the individual.

The distribution of the eruption of bullæ, in his cases, round the mouth and nose, and on the trunk, genital organs, palms, and soles, in a definite and regular manner, quite different from the distribution of ordinary pemphigus, and affecting parts unaffected by it, even in its malignant, gangrenous, diphtheritic, proliferating, or foliacious forms, strongly suggested a tropho-neurotic origin. Associated with the skin eruption, along nerve lines, was a bullous affection of the soft palate, tonsils, and pharynx. The bullæ soon broke, and the mucous membrane became the seat of a sort of diphtheritic membrane, and quickly became gangrenous.

The attack was accompanied by high fever and general septic symptoms which proved fatal. At the autopsy, besides the local affection, there were found septic foci in the lungs, and softening of parts of the spinal cord with degeneration of nerve fibres.

Inoculation of a guinea pig from the first case caused death in two days. There was fever and local inflammation, but the organs were found sterile.

In the first case a slender bacillus (pathognomonic to mice) and the staphylococcus aureus were found, both on the buccal mucosa and in the internal organs, and to these Babes attributed the special form of the lesions.

In the second case the bullæ contained the staphylococcus aureus and a streptococcus and micrococci, and on the pharynx were found the aureus, a large streptococcus, and a bacillus resembling the diphtheritic bacillus. The skin under the bullæ was red and covered by a croupous or diphtheritic membrane.

Thus both cases were very similar; there was a neurosis—a disturbance of innervation—lesions both of the nerve centres and probably also of the sympathetic. The character of the eruption was due to a neurosis of the peripheral nerves, having some analogy to "herpes." There were trophic changes in the tissues, and the septic organisms, especially the diphtheritic bacillus, got a footing, and the exaggeration and fatal issue of these cases was probably due to the complication in the shape of a diphtheria due to this bacillus, of a disease which otherwise would have had a less malignant character.

The author thinks the cases instructive as demonstrating the causal relation between neuroses and infections.

XXVIIa. **An Uncommon form of Keratodermia "Porokeratosis,"** by Vittorio Mibelli.—The patient was a young Italian, aged twenty-one, of strong constitution. He always had enjoyed good health, but had contracted syphilis some months before. His brother, aged twenty-four, had been similarly affected for sixteen years, his sister, aged twelve, for three years, and his father had just developed a similar condition within two months, otherwise there were no hereditary antecedents.

History.—The disease commenced when he was two years old, on the right hand, in three years it had spread over the forearm, about seven it commenced on the left hand, and at puberty began to show itself on the head and neck. It seemed receding on the arm but advancing on the head, but most of the patches had remained unchanged for years. No treatment had been adopted: there had been no subjective sensations. On March 19th, 1893, the distribution was on neck, ears, forehead, cheeks, nose, scalp, hands and right forearm.

Everywhere the lesions commenced as dry conical projections, which slowly increased in size, became flat on the top and surrounded by a raised edge which developed further and spread wider by an irregular circumference.

The enclosed skin was of normal colour but devoid of hairs or follicles, the normal folds were exaggerated and covered by tiny pin-point horny projections, whitish in colour, and giving a roughness to the surface. There were no scales nor crusts, and no moisture. The raised edge was dry and prickly and file-like to touch, and on the larger spots it was dike-like, and surrounded by a thin crust. All stages were seen from a patch hardly distinguishable from the normal skin to patches the size of a franc piece, but on the right forearm the condition had extended to form a narrow zone reaching from elbow to knuckles, surrounded by a sinuous border "like a map."

The enclosed skin was like that of the smaller patches devoid of hair or follicles, and had the same character, only there were secondary lesions included within it.

Histology.—(*a*) The centre of the patch showed briefly:—1. Hyperkeratosis and persistence of horny layers.

2. Proliferation of Malpighian layer followed by atrophy, the interpapillary prolongations becoming long thin cones.

3. Hypertrophy and elongation of papillæ with dilatation of vessels.

Into the interpapillary prolongations the abnormal horny layer extended, and this "depression," with counter-pressure from the elongated papillæ, caused the thinning of the prolongations. The result was "atrophic depression of the horny layer" as described by Unna, and it was seen to affect the Malpighian glandular cones—*i.e.*, the intra-epidermic course of the sweat ducts.

(*b*) The raised edge showed:—1. Great thickening of the horny layer, extending deeply as a cone.

2. From the crateriform apex of this a horny plug extended, continuous with the horny axis, which sunk deeply into the atrophic Malpighian layer.

In some places there was the opening of a sweat duct at the extremity of the plug, and the dilated duct corresponded to its axis. It was either pervious, or choked with horny material, and was surrounded by compact horny laminæ, so that the process was a keratogenetic one affecting the sweat ducts, hence the provisional name "porokeratosis."

Sweat glands were seen in all the sections, hair and sebaceous follicles in none. There was some increased vascularity and infiltration of cutis.

This case belongs to the class commonly called "ichthyosis cornea partialis," or to that called by Unna "nævus linearis verrucosus." The author holds that it cannot be simply a nævoid form, as he has observed it in two elderly patients, beginning at nearly sixty years of age. The histological demonstration of the hyperkeratosis of the sweat duct through its whole epidermic course, the author claims as new.

XXVIIb. **Psoriasis conjunctivæ palpebrarum**—Psoriasis ophthalmica, by Arnold Sack.—The patient was a hairdresser, aged twenty, who had for six months suffered from psoriasis, which in the nummular form extended over the whole trunk and scalp ; the face, palms, and soles remaining unaffected.

On the outer surface of the right lower eyelid there was a scaly patch, semicircular in shape and 1 c.m. in diameter, surrounded by a faint red halo. Its equator corresponded to the ciliary edge, and co-extensive with it there was a ledge-like elevation on the ciliary border, which was continuous with a semicircular patch of equal size on the conjunctiva. This was yellowish-red in colour with a slightly roughened surface, and it gave only a slight degree of resistance to the finger. There was considerable conjunctival injection.

Ordinary treatment soon cured the psoriasis, but the conjunctival lesion remained intractable and had ultimately to be excised, and the papebral patch destroyed by the cautery.

Histology.—A section of the conjunctiva near the ciliary border showed an infiltration of masses of cells down to the muscle and tarsal plate. This infiltration of the submucous tissue constituted the chief lesion, the whole of the normal tissue being displaced by cells. The numerous lax vessels were choked with blood, indicating the hyperæmia which was associated with and caused the infiltration.

The epithelium was greatly hypertrophied and the normal papillæ therefore lost. On parts of the surface there was a kind of fibrous membrane analogous to the hyperkeratosis of the skin patches, and, moreover, the under surface of the epithelium showed peg-like projections into the submucosa, indicating the active proliferation of the epithelium as in the rete of the skin.

The condition is one of great rarity, for Willan's "psoriasis conjunctivæ" having nothing to do with true psoriasis, the existence of it is denied. This case, however, proves the possibility of its occurrence.

XXVIII. **Akrokeratoma hystriciforme hereditarium,** by Pierleone Tommasoli.—The patient who was the subject of this disease was a weakly woman of sixty-six. Her mother was similarly affected, but it occurred in no other member of the family, and in none of her children.

The disease manifested itself after the menopause, and was coincident with a general wasting. It developed slowly, and was aggravated by a severe dermatitis of the uncovered parts, which recurred for seven or eight years when she was exposed to the sun in the fields. At the date of observation the whole skin of the exposed parts was dry and wrinkled, as in slight ichthyosis. On the face there was a patch of a remarkable "ichthyosioid keratonosis." The hair was thin, but there were no bald patches. The arms, from the deltoid to the hand, showed a condition of "ichthyosioid xerodermia," but the skin of the legs, except over the knees, was healthy.

On the hands, the characteristic change in the horny layer was most exaggerated.

The skin of the dorsum was atrophied and cicatricial in parts, dry and wrinkled, and over the wrinkles on the outer parts was a thicker cuirass of dark scaly points, separated by a network of whitish furrows. The horny layer over many of these was raised into horny crusts, many of which had in the centre depressions surrounded by a thin whitish fold.

The edge of the hand was like the blackish bark of a tree. This condition was present also on the fingers, and, over the joints, there were dark horny excrescences like those seen in bad ichthyosis hystrix. These lay in groups, and were in contact when the fingers were extended, but on flexion they separated like the "prickles of a hedgehog."

On the palmar aspect the condition was still further exaggerated, and the horny masses were piled up to the height of 5 to 7 mm. It was best marked on the eminences, while over the rest of the palm the epidermis was thickened and yellowish, the panniculus being atrophied below, and showing slightly dilated veins.

The masses were insensitive, they could not be displaced, and there was no congestive zone surrounding them.

The soles of the feet were shod with a hard, dark, horny covering, dense on the point of pressure and stratified, elsewhere warty or scaly.

The nails were not affected, the secretion of sweat was unaltered, and there were no subjective sensations.

Histology.—The chief feature was enormous hypertrophy of the horny layer, the horny masses being arranged in compact masses, wavy bundles, or sheets, and here and there were zones in which cells were present undergoing degeneration and with deformed nuclei.

The superficial layers of the rete were flattened, pigmented, and undergoing horny change, the cells of the Malpighian layer were enlarged and compressed. The papillæ were elongated, their vessels and those of the cutis dilated and surrounded by an infiltration of round cells.

Diagnosis.—The author includes his case among the akrokeratomata, because the keratosis is a primary condition. It cannot be called ichthyosis even giving that term its most extended meaning, yet it cannot be referred to any of Besnier's four types (V., 2nd Fax. of this Atlas), nor does it correspond with the unique cases of Neuburger (*Monabsh. f. p. D.*, vol. xiii., p. 1), or of Azna (*Journal for Mal. Cut.*, p. 3, 1892), or of Hebra (*Wien derm. Gesellesch*, May 28, 1890), hence he describes it as a new variety under the above title. The author looks on the disease as a slight and chronic inflammatory process connected with a disturbance of general nutrition, not a vasomotor disturbance of nervous origin as suggested by Kaposi (*Ach. f. D. u. S.*, 1890), which is insufficient in his view to account for the catarrh.

Treatment.—Salicylic plaster and gloves removed all the thickened epidermis, but the disease could not be treated radically owing to the patient's general condition.

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THE END.

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THE JOURNAL
OF
ANATOMY and PHYSIOLOGY:
NORMAL AND PATHOLOGICAL.

CONDUCTED BY

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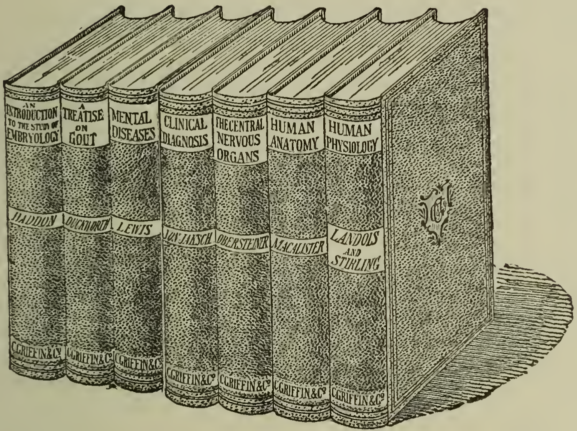

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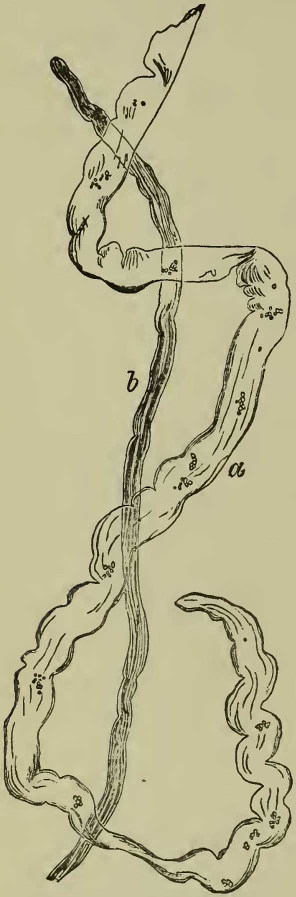

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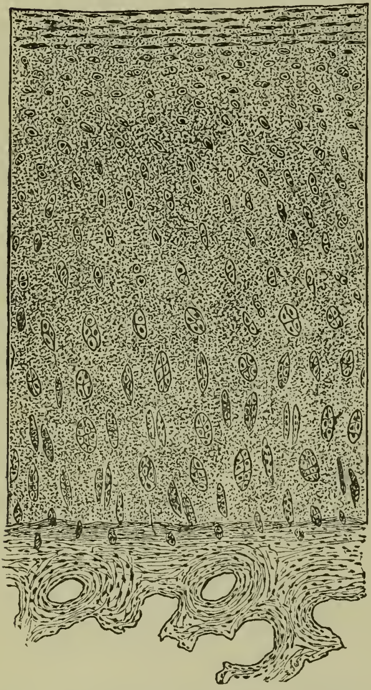

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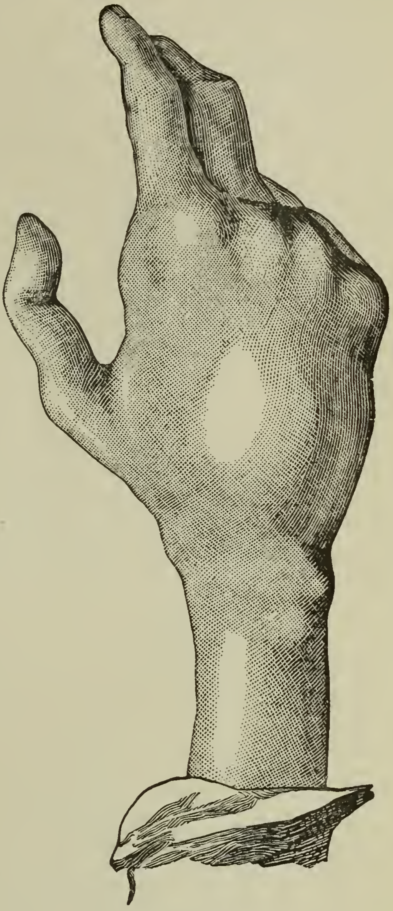

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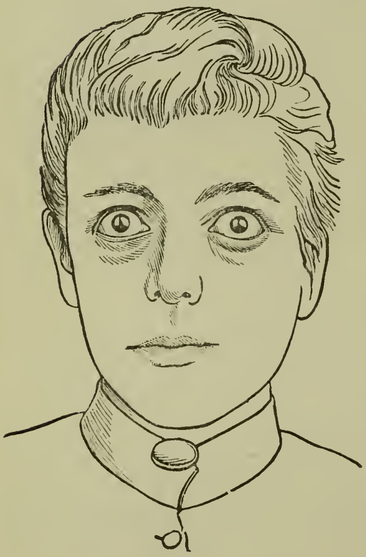

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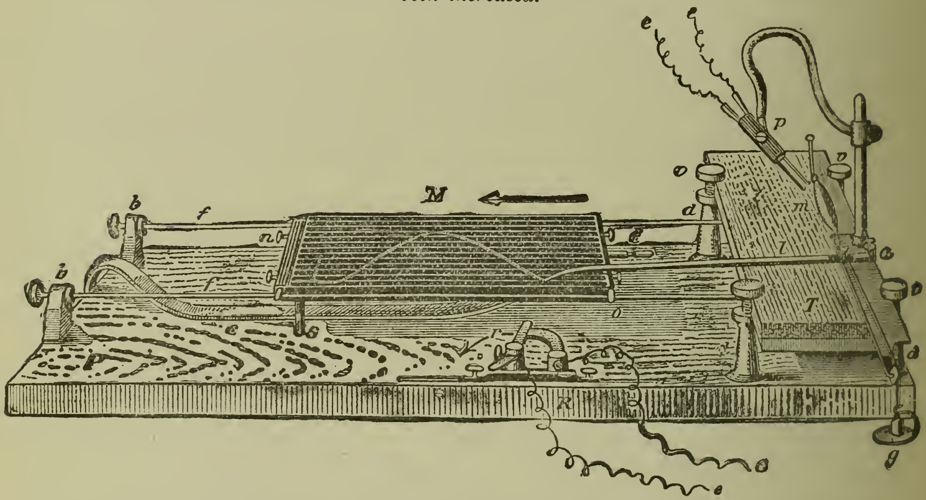

Fig. 118.—Horizontal Myograph of Frédéricq. *M*, Glass plate, moving on the guides *f, f*; *l*, Lever; *m*, Muscle; *p, e, e*, Electrodes; *T*, Cork plate; *a*, Counterpoise to lever; *R*, Key in primary circuit.

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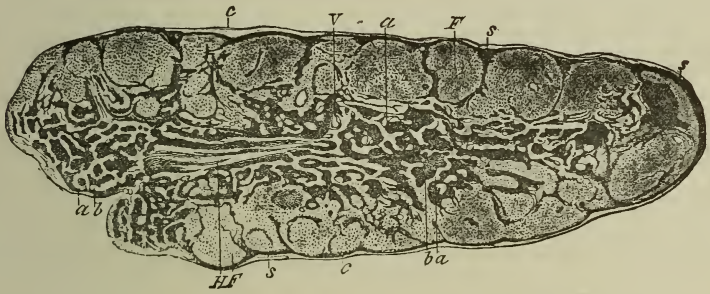

Fig. 200.—L.S., Cervical Ganglion of Dog. *c*, Capsule; *s*, Lymph sinus; *F*, Follicle; *a*, Medullary cord; *b*, Lymph paths of the medulla; *V*, Section of a blood-vessel; *HF*, Fibrous part of the hilum, × 10.

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